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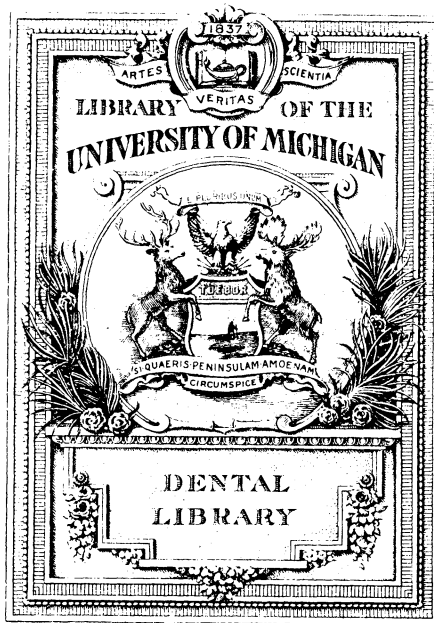
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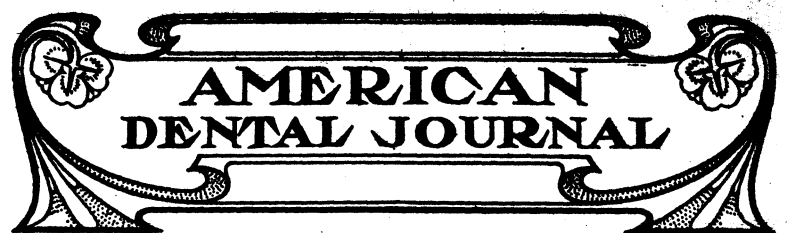
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PROGRESSIVE COURSE OF PRACTICAL INSTRUCTION

ORTHODONTIA.

BY J. N. M'DOWELL, D. D. S.

PROFESSOR OF ORTHODONTIA, COLLEGE OF DENTISTRY, UNIVERSITY OF
ILLINOIS.

CHAPTER XXI.

FACIAL DEFORMITIES.—CONT'D.

In this class we have the most common and yet the hardest facial deformities that we have to consider for restoration to normal or for improvement. The main characteristics are distal occlusion of the



A.

Fig. 1.

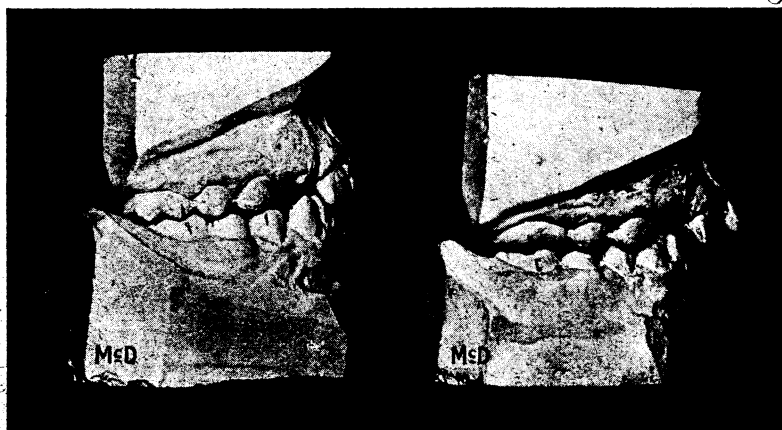
B.

lower teeth, receding lower lip and chin, usually upper lip prominent, often checks flat or hollow, and usually mouth breathers. See A, Fig. 1.

In Fig. 2, the patient being about 10 years of age, it is possible to move the lower jaw forward and establish normal occlusion and

restore the facial outline. B, Fig. 1, shows a front view of the same boy after treatment.

In A, Fig. 3, we have a condition that is just the opposite to that of Fig. 2. In this class we have another deplorable form of facial deformity, due to mesial occlusion. If allowed to remain until maturity, improvements can only be made under the most favorable circumstances. The main characteristics of this class are mesial occlusion, protrusion of the lower lip and chin. In this case the subject was taken at an early age before permanent results had been estab-



A.

Fig. 2.

B.

lished. The lower jaw was moved backward until the normal occlusion and the facial outline was restored to normal. A and B, Fig. 4.

In case the patient is too old for movement of the lower jaw, as in Fig. 5, then improvement of the facial outline is to be considered by enlarging the upper arch, which builds out the upper lip, and contracts the lower arch, making room to do this by first extracting 1 or 2 teeth in the lower and drawing the lower anterior teeth back. A and B, Fig. 6. While this method neither restores the occlusion or facial appearance to normal, at least splendid improvements can be made.

General Consideration. This consideration of the facial deformities with illustrations, represents the typical forms. There may be variations from these, some far worse and many not so bad. The time

for securing the best results in facial contouring is before the bones and soft tissues have fully developed, that is, before the age of 16. Many cases, however, in adults, where the conditions are favorable, may be treated with splendid results in contouring the features. Occasionally cases are presented that have an undue prominence of the facial contour in the vicinity of the mouth, and still the teeth are in normal occlusion. This prominence in such cases is due to an over-development of the lips. (Fig. 7.) The only practical method of reducing this prominence would be by a surgical operation, removing a V-shaped section from the upper and lower lip. Within the author's knowledge, this operation has been performed twice with good results.



A.

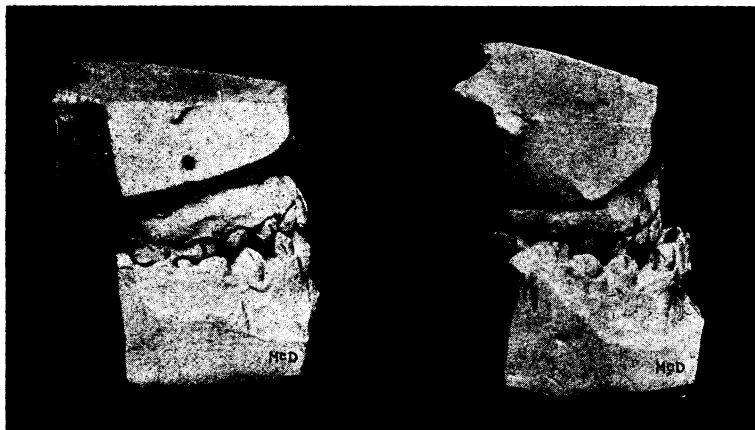
Fig. 3.

B.

This artistic side of orthodontia should be considered seriously. The artist with one stroke of the brush can change the whole contour and expression of the face; but we must remember that we are not dealing with shadowy outlines, but the human face itself. In every case that is presented for treatment, study the profile for improvements. Take as a standard the ideal, the beautiful, the artistic and harmonious face, and work for it and from it. Many are inclined to neglect the facial contouring side of the subject until, in many cases, it is too late. If mal-occlusion is the cause of an inharmonious outline, before any appliances are put on take a photograph of the pro-

file of the case. These photographs will be a great source of satisfaction, both to the operator and the parents, and they can be often used to tell the story far more eloquently than words could express to other parents.

Prevention. If with our modern methods we are able to do so much toward correcting irregularities and improving facial deformities after they are established, why not begin a crusade against the causes? It is far easier to eliminate the cause if taken early enough than it is to eliminate the result of the cause. The work should begin with the babies. Instruct the mother to teach the little ones a correct oral discipline, and that it is part of their daily life to keep the teeth clean, and to use the little tooth brush after each meal, using a drop or two of listerine, borolyptol or some other wash beneficial both to the teeth and soft tissues of the mouth and throat. Im-



A.

Fig. 4.

B.

press upon the little one's mind that there are two things it must watch for, black spots upon the teeth and teeth that come in irregularly. If these things become a part of the daily life of the child, a visit to the dentist is anticipated with pleasure instead of fear. Little children should be taken to the dentist as often as the adult goes, for it is a splendid plan to prevent future trouble by carefully caring for baby's teeth.

Mouth Breathing. One of the conditions that so often mars the beauty of the prettiest child, making it stupid-looking and repulsive,

is mouth breathing. The proper way to breathe is to keep the lips closed and breathe through the nasal passage. Mouth breathing may sometimes be the result of a habit, at first, but is usually the result of foreign growths in the nasal passage and throat. At first one may breathe through the mouth at night, and finally, as they grow older, continually night and day. Many evil conditions result from mouth breathing, such a malocclusion of the teeth, impaired speech, undeveloped upper lips, undeveloped nose, catarrh and throat disease. Every parent should be instructed to watch for the first signs of mouth breathing at night. If the little mouth is open while asleep, close it



A.

Fig 5.

B.

with finger and hold it there for a few moments until it stays. If no improvement takes place, a specialist should be consulted for growths in the nasal passage and throat, and in some cases it may become necessary to wear a broad bandage under the chin and over the head at night to keep the mouth closed until a normal condition has been established. Dr. Thompson suggests the use of a strip of court plaster about one-quarter inch wide, and 1 inch long, the lips are closed tightly and the plaster applied, and held there until it has firmly adhered. If applied properly it will take force to loosen. This is a

good method with adults, and Dr. Thompson reports some excellent results.

In case a little child's nose is not developing properly, but is de-



Fig. 7.

veloping into one of those little pugs that is very cute while young, but very annoying after maturity, the mother should be instructed to develop it by gently stroking the nose downward between the thumb



A.

Fig. 6.

B.

and first finger several times a day from 15 to 20 minutes at a time. It is while the bony structures and cartilages are soft and yielding that the different parts can be molded and contoured into better forms.

Lips. Short upper lips should also be developed by stroking downward with the first finger in the form of a bow. The child should also be instructed to often draw the upper lip downward with the lower lip. The author finds that mothers are always ready and willing to adopt such methods for improving and developing the little one's features. What a joy to parents to have a healthy, well-developed, laughing child.

TAKING IMPRESSIONS.

I have one little suggestion to offer in the taking of impressions—particularly in those cases that are extremely sensitive and easily nauseated—that I have found useful and helpful, and that is to sponge the mouth with hydrogen dioxid. After thus having cleaned all the mucous surfaces apply a : 100 solution of eucain to the whole palate. That will enable one to take an impression in the most exaggerated cases of palatal sensitivity.—*T. B. Hartzell, Texas Dental Journal.*

ADVERTISING.

Advertising in dentistry has been, and is now, condemned, not because it is contrary to the code of ethics, as some newspaper men would have us believe, but because it is utterly impossible for any person in the profession to perform good and reliable operations for a small fee. The only thing in a dentist's advertisement that appeals to the public is the promise of something *good and cheap*. A dentist who advertises does so to gain patronage, get money and thus be successful; but after careful consideration of this question, and having asked the opinion of several practitioners as to what they would deem worthy to be called success in our profession, I have reached this conclusion: The dentist who receives the largest fees in his locality, not once in a while, but regularly, and continues to do so, is the dentist who should be termed successful.—*G. H. Henderson, Springfield, Dental Review.*

PROSTHETIC DENTISTRY.

BY B. J. CIGRAND, B. S., M. S., D. D. S.,

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CHAPTER XLII.

The subject of anchoring bridges upon sound adjoining teeth is always a topic which invites conservative practitioners to study new and preservative methods. Patients do not wish to have these sound teeth enveloped with all gold crowns, besides if such procedure is advocated, it necessitates the destruction of the pulp in order to assure anything like a permanent case, as in Fig. 1. But the consideration of the cutting off of such a good and perfect tooth in order to fasten upon it the bridge—certainly causes discomfiture to the mind of the conscientious practitioner. Yet, under present methods of practice, such is the daily operation. There is not today a problem in the prosthetic practice which invites greater possibilities of the inventive genius; here the opportunity for demonstrating the value of new and progressive ideals is certainly uppermost. The practitioners generally, the patrons all, will gladly welcome a method which will make it possible to firmly attach a bridge to adjacent sound teeth without the display of metal or the destruction of the pulp or much less the destruction of the entire natural crown.

Subsequent to Dr. Peale's ingenious construction, we find practically nothing worthy of note until along in 1886, when our good friend, Dr. Wilber F. Litch, of Philadelphia, made an attempt to anchor a bridge, by hiding the gold on the palatal surface and partly on the occlusal surface, thus allowing the buccal surface of the natural tooth undisturbed and practically clamping or supporting the bridge at the lingual aspect. This is shown in Fig. 2. Then in 1886, the inventive mind of G. W. Mellotte was spurred and he prepared the bicuspid in such a manner that its occlusal surface was covered on the palatal cusp, leaving untrimmed the buccal cusp and by making the partial band of heavy gold of 20K. thus giving rigidity to metal, he too advanced the idea of protecting and preserving the occlusal surface as well as the labial and buccal surfaces. The Mellotte idea is shown in Fig. 3.

That same question has arisen between Dr. Carmichael and the profession regarding his rights and privileges to dispense rights to those seeking his methods, but I am anxious to acquaint my read-

FIG. 1.

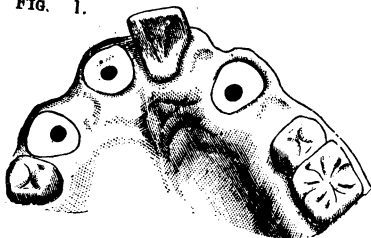


FIG. 2.

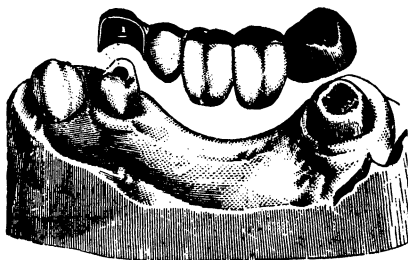


FIG. 3.

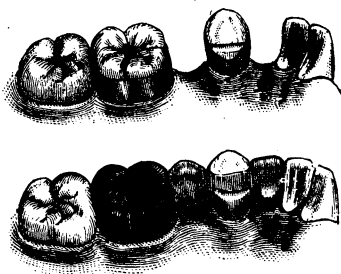


FIG. 4.

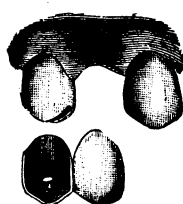


FIG. 5.

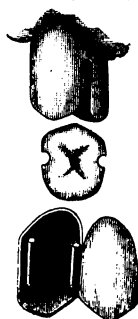


FIG. 7.

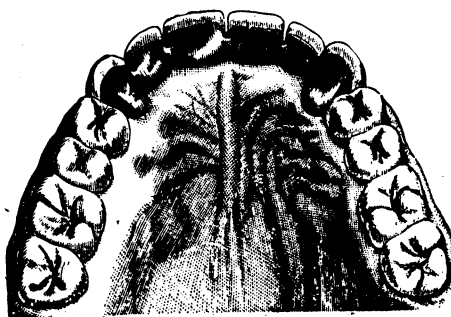
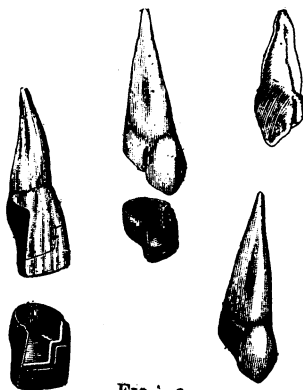


FIG. 6.



ers with his ideal, regardless of what may be his pleasure or the disposition of the professional criticism of his business methods.

That feature of the question is for the profession to settle and has no bearing on the mechanical principles under consideration; hence I give his system in the hope that some method may be evolved which might be better or more generally adaptable than his.

Although the underlying principle of the tooth is found in the old Dr. Peale pattern and it was the first attempt at clamping. Much has been done in this direction, but that there is room for improvement, none can doubt, who have watched the evolution of crown and bridge work. In this particular, little has been advanced regarding the cutting away of tooth structure or devitalization of pulp which has not been advocated quite contrary to conservative dentistry.

In this chapter I am pleased to direct your attention to a method fathered by Dr. J. P. Carmichael, of Milwaukee, and with some modification, could be most effectively employed in this class of cases.

I regret to call attention to the fact that a tooth in the form as improved by Dr. Carmichael, the Peale tooth, (Fig. 5), was among the earliest known porcelain teeth, and though it had no career in the general practice, it did demonstrate the principle of clamping the teeth rather than encircling or covering same with metal, hence the advantage of bringing to your notice this ideal, since it may beget a new conception of this great difficulty.

In the reading of these deductions, I am impressed with the thought that the dentists too little regard tooth structure and do not fully realize the injury done to the patient in the present almost reckless methods pursued—and it is with a view of obtaining from the practitioners in general, new conceptions of office practice on the complex problem that I write thus. Figs. 6 and 7.

In my correspondence with Dr. Carmichael, the following has been obtained from the inventor, and I have arranged the engravings as I thought best, lending such additions to the reading matter as I deemed best for practical purposes. He writes:

"The demands upon the profession are such that the display of metal upon the teeth will no longer be looked upon with favor, and the means of supporting bridge teeth are so limited that no dentist who places value upon the *life of the dental pulp* will be satisfied with his operations until he is fully competent and equipped to make and apply this *attachment* in his practice."

Continuing, he adds:

"My system covers a broad field of operations and establishes a new principle in the restoration of badly decayed teeth, as well as those teeth that are worn away by mastication, or broken by accident.

"The system consists in shaping the inside portion of the tooth and covering the same with a metal form as perfect in its adaptation, as a gold filling would be; this piece receives its anchorage by being fitted into grooves in the side wall of the tooth, or into the existing cavities as the case may be. This little slipper like form is cemented upon the tooth the same as an inlay is cemented into a cavity; in fact it is an inlay mechanically retained, greatly strengthening the frail portion of the tooth instead of depending upon this tooth structure for its support, as in the case of fillings.

"By this system of work, the health and beauty of the tooth is preserved. It provides a means of taking care of those conditions of the teeth, so frequently met with, where the tooth is too good to be crowned, and the decay too far advanced, or the walls too frail to support a filling. Inlay work and filling is all very well where the remaining walls are of sufficient strength to support the same. This work is particularly desirable in cases where the teeth have been filled and refilled, until there is nothing remaining to support a filling."

Regarding pyorrhea, he says:

"The disease is invariably accompanied by loosening of the teeth; and the one treatment that is acknowledged as of the most importance toward effecting a cure, is to hold the teeth firmly and permanently in position. By the use of this system a permanent support can be made for the loosened teeth, and at the same time the space between the teeth are free for treatment and cleansing."

And this he advocates as the prime necessity for his method:

"This work is highly appreciated by the better class of people, who want their teeth to appear as natural as possible, and to serve them for a life-time.

"The force applied in mastication, runs from two hundred and fifty to three hundred pounds pressure; thus the necessity of performing dental operations that strengthen tooth structure."

(To be continued.)

DENTAL PATHOLOGY.

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NOIS; PROFESSOR OF ORAL SURGERY, DEAR-
BORN MEDICAL COLLEGE.

We have just spoken of that phase of speculative pathology that pertains to those cellular toxins that might under favorable circumstances be the result of cellular activity of the animal body, especially in the higher form of the animal kingdom, as in man. But as we have previously stated, this condition is purely hypothetical; as Victor C. Vaughn has said, "auto-intoxication is usually used to cover up our ignorance." He further says, "the time has not yet come for a thorough investigation of this subject. It is indeed almost impossible to give a single case in which you can exclude external factors which influence the diseased condition." However, we shall not discuss this question farther at this time.

There are certain poisonous products formed outside of the body that will produce certain phenomena purely poisonous, when introduced into the animal organism. The result of such introduction is called exogenous intoxication. The products are sometimes classed under the heads of causes of immediate or of remote action. The most common, perhaps, of these are poisons usually called ptomaines, produced by the action of bacteria on dead organic substance. These agents, however, will be discussed later when we review more closely the action of bacteria.

Under the head of poisons we might remark that the caustic irritations belong to the acids and alkalis as well as the salts of the heavy metals, especially mercury, zinc, silver and antimony. A few vegetable substances, however, such as mustard and croton oil, and a few animal products like that of cantharidin, venom, etc., the pathological lesions produced in each individual poison is always in proportion to its activities in particular tissue cells. For instance, if some of these, such as cantharides and mustard, are applied to the skin they will produce an erythematous condition in the locality where they are applied; and if the application be continued long enough vesication and necrosis will be the result, while if croton oil is applied there will appear characteristic pustulation.

The poisonous products that belong to the class known as *venom* are usually introduced by insects or various forms belonging to the scorpion, centipede and tarantula variety. As a rule these cause more destructive changes in the tissues than those of other such forms, as the wasp or spider. Serpents of various kinds, and especially the viperidi, are still more poisonous, but can not be discussed in a work of this kind. The reader is referred to the discussion of this subject and to the more extended study of the question as found in the work on toxicology. But it should be remembered in this connection that some of the poisons with immediate and remote action many times are harmless when introduced into the body in a dilute form. Such poisonous products as arsenic and phosphorus, with that of antimony, have previously been discussed under their various heads.

In speaking of the poisons classed under the head of remote action there are those agents that are readily absorbed and are hastily carried to certain organs for elimination, in this way producing the pathological changes that are so common and constant when they are introduced into the animal body. It would be interesting as well as profitable if time and space would permit to discuss the physical chemistry of the cell constituents of the animal organism, because upon this rests the fundamental basic principles of pathology, especially that part of pathology that pertains to the microscopic study of cellular changes in animal organism. But as we have previously stated there perhaps is no change produced in the cells of the body that can be classed as pathological except it be through some external agent being introduced in sufficient quantities to bring about either immediate or remote, physical or chemical function in some part of the animal organism.

In discussing the subject of pathology one can not do the subject justice without taking into consideration the defects of development. Any departure in purely functional or anatomical changes from the normal embryological developmental processes will lead to some so-called malformation. We usually speak of the typical formation of an organism, whether it be multicellular or unicellular, as the normal form of that particular specie. Those animal or vegetable forms that deviate in their structure or function from the normal type of their specie we speak of as atypical malformations. If this deviation from the normal type of unusually large they are designated as monsters, which means grossly malformed type. The devia-

tion from the normal may occur in various ways. For instance, a partially divided individual, or two individuals united, constitute deviations from the normal individual; and a deviation from the normal is classified in accordance with the degrees of deviation. The so-called hare-lip is one of the forms of defects in development. Such deformities as those just mentioned bring about certain interferences with nutrition. For instance, in the case of hare-lip the child is unable to nurse in the usual way, and certain functional activities in the body are so disturbed that many, if not all, of the physiological functions are crippled, of necessity rendering the individual incapable of becoming fully and well developed as he otherwise would be if it were not for this deformity.

The cause of these malformations is not by any means well understood. In cases where this deviation from the normal is very extensive it begins early in the embryological process, and the majority of authors are of the opinion that it begins at about the stage when the process of modification of the various tissue cells begins. There are, however, many deformities that come even later in fetal life and even after birth. This is especially observed in certain developmental processes of the teeth and jaws.

Experiments have been carried on in some of the vertebrate and invertebrate which show that a disturbance of the egg or ovum will many times bring about monstrosities and other deviations from the normal. The rolling or moving about of an egg will cause malformation in a chick. The evidence of the extended deviation from the normal forcefully illustrates that even a very slight deviation in certain tissues or cells may render that part slightly abnormal, but not to the extent perhaps that it could be recognized by the naked eye or even sometimes by microscopic means. An illustration which might be given is found in the case of a tetanus bacillus, which normally grows in the absence of the free oxygen of the air. If it be changed from an anærobic to an ærobic environment it will lose for the time being at least its power to produce the tetanus toxin, which is its main function in its natural habitat.

This illustration serves to prove how sensitive protoplasm is to its normal environments or to the absence of its normal environments. This brings us to a point that is extremely important to us, the question of nutrition. This is a subject that is as broad and far-reaching in pathological questions as any subject could possibly

be, for it directly or indirectly influences almost any question under consideration. With normal conditions it might be said that the appetite is usually a satisfactory guide to the quantity of food necessary to be consumed. But there is a diseased condition in which the appetite is abnormally great, a condition in which the individual takes more than the necessary quantity of food. This is called bulimia. The opposite to this term is anorexia, which means that the appetite does not crave the quantity of food necessary for the full maintenance of the nutrition that is required to sustain the physical forces. Pica is a term that is applied to the abnormalities of the appetite, which is as extensive as ranging from those craving for candy or pickles to cannibals or earth-eating individuals. There are some cases described in which there is actual dread of food. This is called sitophobia.

In speaking along these lines it may be well to state that thirst is also often abnormal, and one will take the same position with reference to drinking as to that of eating. This form of diversion is manifested more often in the form of a craving for liquids than in any other way. This is called polydipsia. These symptoms are beautifully illustrated in diabetes mellitus. This appetite is manifested also very strongly in the craving for spiritous liquids and is usually designated as dipsomania.

In the conditions just mentioned, with the various forms of deviation from the normal appetite, if food is not taken in, there at once appear the characteristic signs of loss of tissues, which manifest themselves at first in the tissues of the body that play the least useful part in the body for functional activity, and that is the adipose tissue; they then extend to the muscular tissue and greatly impair the whole physical forces of the body. The excess of food has, as a rule, less harmful influence on the body than does the lack of food; however, the former can be a source of great concern under some circumstances.

The foodstuffs that carry on the function of the life process naturally fall into three groups—namely: proteids, carbohydrates, and fats. Under the group of proteids are classed albumins and albuminoids. These substances are principally digested in the stomach and small intestines, and they are acted upon, as is well known, by two active ferments, pepsin and trypsin. Pepsin is the result of the activities of the gastric glands. Trypsin is a ferment of the pancreas. The action of these two ferments is to render non-

diffusible peptone into diffusible peptone. The active peptonization of albumins usually must take place in strongly acid solution, while the action of trypsin on albumin can only be accomplished in an alkaline solution. The chemical changes resulting from the action of these ferments on albuminous compounds are quite similar to each other. The first action that is accomplished in this process is the action resulting from hydrochloric acid and pepsin upon the proteid, producing acid albumin (syntonin); then this is converted into albumose or primary globulose. The secondary stage develops deuterio-albumose, sometimes called proteoses; then the last diffusible amphopeptone, the action of which is called peptic digestion. The tryptic digestion begins and ends with some variations from the one just described. The trypsin converts proteids into deuterio-albumose or globulose, and here instead of having amphopeptone formed we have anti-peptone. We sometimes have a diversion from the last named agent and have hemipeptones formed. The anti-peptones are useful nutritive substances, but the hemipeptones can be further reduced into certain end products, such, for instance, as leucin and tyrosin, asparic acid, tryptophan, and various other acid bases belonging to some of the aromatic forms of certain chemical processes.

It may be seen here how these various processes may become diverted from purely normal physiological lines to pathological proteid digestion. It might be possible that abnormal secretion of pepsin, abnormal quantities of free acids, etc., might appear in these processes, any one of which might bring about some very pathological processes of digestion.

The digestion of carbohydrates is, or should be, well understood by every dental student that it would require little discussion at this time, but a few passing remarks at this point may enable the student again to refresh his mind as to carbohydrate digestion. The process takes place in the mouth and stomach by a ferment found in the saliva (ptyalin). After the carbohydrate passes through this process and reaches the intestines it is further acted upon by amylopsin, a ferment of the pancreatic juice. This last ferment may be said to be the last and final in the digestive process of carbohydrates. The ptyalin of the saliva and amylopsin of the pancreatic juice convert starch into sugar. The final end product of this process is maltose. The pathological carbohydrate digestion is a subject that must receive more

attention and investigation before many of these pathological phenomena can be thoroughly elucidated.

The digestion of fat is accomplished principally by another enzyme of the pancreatic secretion (steapsin). The chemical manipulation in the body of this material is not well known, but the probabilities are that the fat is split, by hydrolytic cleavage, into glycerine and fatty acids, and the fatty acids combining with the alkaline salts of the bile and intestinal juices form a sort of soap. Glycerine and soap are easily diffusible and in all probabilities this diffusion allows fat to find its way into the metabolism of the animal economy. In the case of disease of the pancreas there is a decided pathological condition taking place in fat digestion. The presence of inorganic salts in the nutritive functional activity of the body are so apparent that they hardly require any consideration at the present time.

The word metabolism plays such an important part in our consideration of all living processes, whether they be normal or abnormal, that we must here give some consideration to the meaning. As the term is most commonly used, we shall state briefly that metabolism is a molecular change in which all living substance must take an active part. Certain molecular alterations of the tissue manifest themselves by the changing of energy of certain food products into the energy and tissues of the animal economy. This molecular rearrangement that we ordinarily speak of as metabolic processes are usually looked upon as chemical processes peculiar and inherent only in living substance and is divided into two distinctive groups. Anabolic is terminated to designate a synthetic process and which is accomplished in the cells of living tissue when certain nutrient materials are brought to them through the circulating blood. This process is accomplished by the aid of an enzyme characteristic of particular cells or fluids, and is constant under normal circumstances in an effort to build up a more complexed structure.

Katabolic processes are for the most part analytic in their tendency and apparently acting as a reducing substance, or tend to break down the highly complexed synthetic products into the simpler compounds again, or, in other words, to bring them back to the simpler element or to the inorganic molecule.

(To be continued.)

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.,CLINICAL PROFESSOR OPERATIVE DENTISTRY, CHICAGO COLLEGE OF
DENTAL SURGERY.

SHOP TALKS, No. 13.

USES AND ABUSES OF THE RUBBER DAM.

As the success of many operations in the mouth are dependent upon absolute freedom from moisture, the invention and introduction of the rubber coffer dam (as it was at first called), by Dr. Barnum, many years ago, may be looked upon as one of the most valuable adjuncts in dentistry.

Up to that time exclusion of moisture from the field of operation was accomplished only by the use of napkins and stopping the saliva ducts, which was not always successfully done, especially for any prolonged operation. It took a studied, painstaking and skillful bit of manipulation to place napkins, and replace them as they became saturated with saliva, without endangering the progress of the work.

All practitioners know how fatal a little moisture is to the progress of work with cohesive gold, and it is safe to say that had it not been for the rubber dam, the making of cohesive gold fillings and especially contour restorations would never have developed into such a science as we know now, and that has been the pride of many artistic dentists for years.

Very likely the era of cohesive gold operations, as we know it, would never have been, had it not been for the office of the rubber dam in so perfectly excluding moisture from the field; for no matter how adept the operator in adjusting napkins, the moisture of the breath was not excluded and that interferes with the perfect welding of gold.

But not with gold alone is the exclusion of moisture essential. Several other filling materials need to be kept dry until finished, as well as the cavity into which they are to be introduced. The cavities, however, may be easily kept dry for a period long enough to insert plastics that may be quickly done without adjusting the rubber dam, while a prolonged operation would meet with failure; especially

in some mouths where the flow of saliva is profuse. Some of the cements, for instance, must have a dry cavity, but being a so-called hydraulic cement may be, and should be, moistened as soon as they are inserted and shaped as desired. Other cements must be kept dry for a matter of fifteen minutes to half an hour. This may readily be done with napkins or cotton rolls in the upper jaw in most cases, perhaps, while it might be exceedingly difficult on the lower jaw in some mouths even with a saliva pump where that fluid accumulates rapidly.

In these days of particular efforts in antiseptic precaution, the exclusion of germ laden saliva is regarded as essential in successful treatment of putrescent pulp canals. This may often be safely done with napkins or rolls if the treatment be of short duration. We know, too, that in many instances, with *some* patients who will remain quiet, and keep the tongue quiet, we can conduct quite a long treatment, if need be, without the aid of rubber dam or napkins. Some patients who are ready to co-operate as much as they can, may be easily handled with little or no danger of any contact of saliva, while others will forget all precautions and close the mouth the moment they get a chance and flood everything.

There are, however, some clamps especially designed to hold napkins or rolls, and which, in position, naturally preclude closing the jaws; and there is also a clamp designed to carry just a small patch of rubber to be used for these cases of treatment, and they are both very convenient adjuncts.

Now, the adjustment of the rubber dam is not usually regarded as a painful part of dental procedure or preliminary, but without care and precaution it often is painful, and especially in adjusting clamps and ligatures. As this is not a serious matter as compared with drilling and excavating, many operators are apt to forget the gentleness that should mark every movement where possible to be gentle.

In many cases neither clamps nor ligatures are necessary to hold rubber in place. On the contrary, many other conditions cannot be dealt with without clamps or ligatures or both. Clamps are often not only painful at the moment of adjustment, but so infringe upon the tender gum that they remain painful, sometimes with increasing severity during the whole operation. This too often due to misfit clamps, for which there is hardly an excuse.

Most operators know, but some may not, that in many cases all that is necessary to keep moisture from working through the hole in the rubber around the tooth is to take pains to turn the edge of the rubber hugging tooth upward (or downward as the case may be) toward the gum, by the use of a broad bladed burnisher gently worked around the necks turning the edge as desired. As long as that edge is turned outward, moisture will ooze through; carefully turned in it will not, if not disturbed. When it will not "stay put" a burnisher may be dipped into some sandarac varnish, when the desired result may be accomplished.

Then we all have those cervical cavities where the gum tissue must be pushed and held away, even at the expense of pain, if the tooth is to be filled, though cocaine comes to our aid if one feels safe in using it. The rubber dam with the elasticity peculiar to that substance, accommodates itself to the unusual conditions very perfectly and really as nothing else would, keeping away both saliva and blood.

Take it all in all, the rubber dam is a decidedly important thing in modern dentistry. In fact, a dentist now would hardly know how to practice without it, and as has before been indicated, it has been one of the features that has made possible that perfection in other features credited now to the up-to-date dentist. Its blessings are many but it has also some abuses that every operator should study to eliminate. To eliminate some of these abuses, we must eliminate some of our long tedious gold fillings. With a knowledge and ability concerning inlay work, where the entire exclusion of moisture is not requisite except for a brief period, it may be justly said that bucking and gagging, as it is sometimes called with rubber dam for a long tedious sitting begins to be something in the nature of an abuse.

Studying the comfort of our patients should be a part of our efforts as dentists; and it is not infrequently an abuse to put on a rubber dam, when our patient may be as well or better served without it. The dentist who studies to avoid pain and discomfort as much as possible is going to find greater appreciation than perhaps one with a bit greater skill, but ignoring these efforts. One of the things that commends the inlay method of filling teeth, is the avoidance of long tedious sittings and operating without the rubber dam.

Another abuse of the rubber dam and the most serious one, is using a piece second hand on another patient; unless it be using it the

third, fourth and fifth times. It has to be a pretty careful and most thorough manipulator who can so cleanse and purify a piece of used rubber so that it may be used again with a guaranty of safety against conveying infection. The usual facilities for cleansing and sterilizing instruments will not always do with rubber dams. The very thought of using a second-hand piece is repugnant, be it ever so clean. No better proof that our position is right is needed than to take it right home to ourselves. Going to another dentist for a service to ourselves, which will we prefer to have used on us; a new fresh piece or a second-hand piece? Ask any patient what his or her preference may be and see how quickly they will decide for the new piece.

It looks like a waste of good dam to throw away a piece used only on one edge, perhaps, and there are three other edges; but dam is not so expensive that we need to economize in it and in making charges for service, rubber dam may be considered, if need be, as well as other materials used. When you think of it, we cheerfully or thoughtlessly waste other things that run into more money. We sometimes cut fifty cents, or perhaps a dollar off a large gold filling in finishing it and not wince; but three or four cents' worth of rubber appeals to our sense of economy. Even our poor patients would pay the difference in cost willingly, if we added the expense of the rubber to the bill, rather than have the second-hand used.

No doubt some dentists can and do insure absolute cleanliness and sterilization, if the dam is washed, but that don't remove the unpleasant suggestion that goes with a second-hand piece; and thought of by the patient, too, if not mentioned. When the washing is left to an assistant, we haven't any certainty of the thoroughness; and again it is difficult to keep the dish it may be washed in, or perhaps boiled in, entirely free from contaminating germs.

Of course, we do not hold that a fresh piece of rubber off the roll is absolutely clean and sterile, and proper precautions should be used to not have any question about it, but it does not carry any suggestion of having been in another's mouth for some time, and carrying, possibly, the germs of some infectious disease. Most of the rubber comes to us with an assurance of being clean and safe, but we can easily treat it with an antiseptic to be more sure. It would be to the interests of rubber dam makers to guarantee to us rubber that has been antiseptically treated.

(To be continued.)

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

RY R. B. TULLER.

Vell, Ai tank Ai gotter tal some more bout me, Ole, in hans new ocupation, dentistry. Har bane olright. Ai bane make money—eezy money.

Un sence Ai bane see you last Ai bane gat me some new skol-lups. Ai bane yoin a soskiety. Ole now bane a peddy-goggles, an har bane a fine ting, you bat!

Vell, of skourse; vy not? Dond Ai bane perfesser by a dental skollege? You bat!

You see, some time long in Deskember, somebody hav tal if Ai gone up by da Great Northern Ai find dental soskiety convention. So Ai gone up.

Ai fine 'em olright, for Ai see Yimreed in da bunch. Har got all da time in everyting bakause har bane on da trust board.

A dentist faller har tal me, all dem fallers bane Green dentists, an if Ai want to butt in Ai have to have da pastvord. An den him say, "Ai tal you, Ole, it bane easy; so den you go an tal it den you get in." An har tal me yust say "banana."

But Ai tal hem, "No, not on your life. Ai don't axskociate vid no Ginneys—not if Ai know. An Ai tal um dis Detta Skigma dond bane da soskiety Ai bane lookin fer. Den har tal me da Soskiety of Dental Peddygoggles have meet by da Palmer House.

"Vell," Ai tal um, "har may be vorse as Ginneys, but Ai go see, bakause Ai bane a dentist an Ai gat to bane in da skwim." So den Ai go.

Now who you tank Ai meet da first ting ven Ai go by da Palmer House? Yust my ol perfesser, Doc Measley, of da Onion Dental Skollege. Har tal me har don't bane a member of dose peddy-goggles, but it bane no difference, hem say; hem come over yust the same to rubber. Den Ai tal um, "Me fer da rubber, also." So den ve rubber.

Bangby Perfesser Doc Measley, har look me over an har tal dis: "Ole, you bane look lak reddy money. You bane make money,

Ai gass. Vy you dond came around un see your ol Halma Maytur some time? You bane our alum-eye now, and ve bane proud of you. Vare you find a trust skollege feller who gradulate in swexteen veeks an gat good bizness an bane a perfesser in such time, huh? Bagosh, Ole, you bane da schmartest faller vot ever bane graduated from da great Onion Skollege by Amerika, Chiskago."

Vell, me, of skource Ai know har tal yust right alright, alright, but Ai not tal hem so. All same it bane up to me to say back something good an skomplimentary; but vot? Ai don't vant to say, "Perfesser Measley, you bane da best perfesser in Chiskago," bakaue Ai tank about—oxskuse me, Ai bane have too much delicatessen to tal hem—but Ai tank bout me, Ole, da best perfesser un da best skollege by Chiskago; so Ai yust tal um, "Doc Measley, you bane a fine yentilman, alright, alright; less go hop off da vater vaggon."

Hem say, "*Ol right*; vere ve go hop?" An Ai tal hem ve go down stairs, Ai tank, fer Ai see some peddygoggles going down an ve follow, fer Ai tank dey yust look da bane goin hop, too.

Say, you bane in dose Palmer skagoon? Yas? You bat hem bane a fine place. Har got bar half block long; but you tink ve gat next? No, ve gat in bout swex row back an vait bout swexteen rounds. Everybody up next bane take shake drinks un high balls on skware ice mid polly-narix, un har take lot of time; un den dey talk un laugh un repeat.

But bangby ve get next alright un ve take high ball on skware ice an polly-narix, an han bane perty good—only dose ice hav bane sawed out too big, un dey skare a faller ven hem pours. Hem don't skare me un Doc Measley. Ole bane good sport alright—Ai gass. Tree high balls, swexteen minutes, yust lak other fallers. Den ve fall back an rubber.

Doc Measley har bane funny faller un har say, "Ole, peddygoggles up stairs, goggy-peddles down yare, huh?" un har laugh hard. "Vell," Ai say, "vot's da yoke? Ai dond see?" An Ai dond find out yat. Ai don't find out yat vot peddygoggles bane; only dey vas schmarter as other dentists, maybe, un dey all bane good fallers, un dey all bane factulty fallers, un Ai gat a pointer. Yas, Ai goin get me up a factulty by my skollege. You bat!

Vell, ve stand un listen un rubber un Ai hear one faller har tal another faller lak dis: "Ai bane gat up a new plate, by new vay of paper pulp, an har bane a dandy. Teeth an all, any color you

like. Ai get a patent. Yas, hem bane a dandy ven Ai gat um, so har dond soak water. Ai *almost* got um so." An the otter faller har bane near-schmart un say: "Say, what *you* want, Doc, bane a plate dot don't soak up whisky." An da otter faller har say: "So? Vots da matter by you? Ai make *you* a plate like dot." But dey didn't fight.

Den Ai bane gat nerve, an Ai speak by dat faller, un Ai say dis: "Oxskuse me, but Ai vant ax you for a 'pinion: If you make von of dose plate for a man, un he vare em in his hip pocket, un sit down on em, an dey bite hem, and har gat dose blood pizen, can hem sue you for breach of promise, or someting?"

Vell, Ai bane tank he vas a yentilman un like a yoke, but hem say: "Look a yare, vot you buttin in for? You yust go to ——!" Vell, Ai didn't go enny vay also. But har hatter set 'em up fer about swextee fallers. Ai gass yas!"

Over dis oller vay a faller har say to anoller faller: "Look here, Ai passed that up twenty yare ago. Har bane unpractical, unskientific an obskolete." Ai dond know vat it vas, but da oller faller har say back: "Now, look here; you can't tal me. Ai bane practice dentistry fore you vas born, an Ai bane teach in a skollege twenty-five yare, un Ai bane a peddy-goggle for da last leven yare, and Ai gass Ai know vat Ai bane talk about."

Den da oller faller har tal da oller faller: "Ai don't care vot you say. Ai take advance position on dose tings. You listen by me now, an Ai tal you how to make new kine of porcelain crown." Den da oller faller har listen some, an har butt in more; an da oller faller har got huffy an har say: "Listen, listen, you chumps! Vy you don't listen? Ai tal you something." Da oller faller har say: "Oh, rats! You can't tal me ennything. Ai von't listen!" Den oller faller har say: "Vill you keep still von minute? Ai got a proposition you vill listen to." Den oller faller har say, kind of mad: "Vell, vot it is? Vot it is?" Un da oller faller har say: "Let's have anoller high balls." Den da oller faller har say: "Vell, now you bane talk some skence!" Un dey didn't fight.

Den Doc Measley har say: "Ole, Ai got a proposition," un so ve yust make ourselves in da front row again. Doc Measley har say: "Ole, Ai gon call for a drink hem can't make—not dis time a yare," so har say, "Mix us up a mint yulip." You tank da barkeep bane faze? No; har say, "Alright," an har go by de ice box and har

brang out some green leaves an har smash 'em in a glass, an vid whiskey an sugar ve drink um. Den Doc har ask, "How you like um, Ole?" Un Ai say, "Hem bane vary goot, but you don't fool Ole. Hem bane mint yulip maybe, but hem bane skanitol yulip all a same. Hem bane goot alright, cause hem bane antiskeptic. Oh, yas, Ai gass Ai know skantol."

Vell, Doc Measley har conskluded to go home, but Ai hear bout a banket un Ai say to me, "You, Ole, you vant to be in da skwim; maybe you go to da banket." So Ai go by a faller un Ai tal um, "How bout doze banket?" Un har tal me, an har ask me if Ai go. Den har say hem bane got a ticket un har can't go himself, an har say, "Let me sell you my ticket; it bane cost me \$10." An Ai say, "Ai don't bane a member." Un har say, "You bane a perfesser in a skollege an das alright. You buy dis ticket an you bane a member, das all—see?"

Vell, Ai take hem up an hand over da bucks an gat a ticket.

Den da faller har say, "Now, Ole, if you want to bane real swell, you ought to bane have a dress suit or tuxskedo bizness."

Vell, of skourse, Ai vant to be skwell, un goot faller, un so nex day Ai 'tend all da meetings (up stairs) an dey tal how to run skollege, an Ai gat more pointers. Den Ai go by da Hub un Ai buy me a tuxskedo suit, a bile shirt, a yumpin yack hat, white gloves un a new pair shiney shoes, un a cane, un Ai vent by da barbers un Ai bat you Ole look fine. Ai gass yas, fer when Ai vent in by da banket dat night Ai yust make a senskation un Ai vas mistaken fer Yak Nymans. Har bane a Norvegan, too, un a pace setter. So now, by me, Ole.

So Ai eat doze banket, shake hans mid Yon Byram un de oller head fallers, un now Ai bane full flege peddy-goggles. Next time Ole goin make a speak, un Ai tal how to make a gradulate, a perfesser and dental skollege in bout swex months un beat da trust un Yimreed, bote. Goot bye. Ai see you agin some oller time.

SHOOTS FROM THE WISDOM TOOTH.*

BY E. W. OLSON.

In what more fitting manner could a society of doctors of dental surgery hold their annual celebration than by dining together? At the festal board we find a *set of plates* provided for every guest—doctors and patients alike.

Here teeth were inserted while you ate.

Toothsome viands furnish the most palatable *filling* for that *cavity* which engages the attention of the dentist oftener than any other.

Here we sit down together to test the apparatus which either our maker or his apprentices in the dental workshops have so graciously installed in a central and convenient part of our faces.

For what is a public dinner but an open contest in *mastication*, or, in slangy parlance, a *chewing match*, in which the more substantial courses on the menu or table of future contents finally are replaced on the order of toasts by delicious hot air, with wine sauce.

And if all the lay members sitting here are at all like myself, they experience a sense of sweet revenge every time they have an opportunity to dine off of the D. D. S.'s, who are putting *their* teeth into *us* all the year round.

The ancient Norsemen—this was long before they had risen to the dignity of Scandinavians—had a pleasant habit of knitting life-long foster brotherhood in pairs by cutting some convenient vein and commingling blood. In our day, when blood flows, it is generally the sign of left-handed courtesy and no great measure of friendship between the parties concerned. I will admit, however, that some sort of fellow feeling may spring up between the dentist and his victim from the latter's mingling his blood with the whirlpool in the *dental cuspidore*; nevertheless, I am inclined to think that brotherhood and good fellowship are better and more agreeably *cemented* by means of a good dinner.

The dental profession is not as old as might be supposed. You can not tell its age by the teeth.

Now, there's the *tooth of time*, for instance. It has been gnaw-

*Read at the banquet of the Scandinavian-American Dental Society of Chicago, January 26, 1907.

ing, gnawing for numberless centuries, causing everything it comes in contact with to *decay*. But that old tooth—whether it is an *incisor*, a *bicuspid* or a *molar* your science has never been able to determine—that old tooth is still as sound as ever. For that reason Father Time has never been much of a “hit” with the dental profession. But I assure you, gentlemen, that if any of you should succeed in drawing the tooth of time, your reputation would be made all right. That man’s practice would at once reach enormous proportions, especially among the fair sex.

As compared with other professions, arts and crafts, the dentist is quite a fresh—I mean recent—phenomenon. I have found by diligent research that his vocation is an offshoot from two other “professions”—those of the tonsorial artist and the plumber. In former days the barber attended to people’s teeth as well as to their hair and whiskers, and was often called upon to let blood, one of the principal duties of the old-time physician. True, the barber to this day continues to exercise the function of blood letting, but he has been shorn of the dignity that goes with the modern medical and surgical profession. A modern surgeon may give his patient a pretty close shave, but of course he never bleeds him—never.

How, then, was he associated with the plumber’s craft?

Why, in olden times it was the custom to have hollow teeth filled with *lead*, not gold. I have been creditably informed that *plomb* is French for lead, and the knight of the scissors generally did the job. So you see that when the *barber* was a *dentist* he was a *plumber*.

Taking a gigantic stride from the ancient history of the profession down to the present, we proceed to analyze the modern, up-to-date, electrically equipped, and, best of all, *painless* dentist.

Most other business and professional men are driven to the disagreeable extremity of advertising themselves in order to get their names on the lips of the public. There’s where the dentist has the “bulge” on them. *He is in everybody’s mouth*. While most of us have difficulty in getting recognition for our work, the dentist’s efforts are often cried about the community before he has fairly begun operations.

While greed is not counted among the virtues, a miserly old skinflint is an object of contempt and we have laws against usury, yet the public submits willingly to the *grinding ways* of the dentist.

To deprive a person of any of his members has been a punishable crime as far back as the adoption of the mosaic law, at least, yet the dental surgeon deprives us of member after member with impunity. Should anyone dispute our statement that a tooth is a *member* of the human body, that person surely has never known what it means to sever all the *tender ties* that bind us to them and to have *old associations torn up by the roots*.

Normally, it takes some time for a man to acquire an influence in politics. But any husky young dental practitioner has the "pull" of twenty mule teams or a First ward alderman in him from the very start.

The preacher may thunder against rottenness and devote his life to the task of keeping the bad members from making others bad, and all this with little or no visible result. The dentist, on the other hand, enters right in the teeth of the evil, cuts away rottenness, weeds out the bad ones, *bridges* every difficulty, and acts as a drawing and uplifting force on humanity toward better ideals and cleaner teeth. Like the clergyman, he earns his bread by the jaw, although in his case the jaw is not his own. Both have greater faith in operations than mere words.

The dentist may not be as good a man as Sampson of old in slinging the jawbone, yet he is usually a pretty good man *on the stump*.

As a public speaker he has the advantage over other spellbinders. They always run the risk of being interrupted and possibly worsted in argument. But the dentist takes no such chances. He never begins talking until he has his hearers securely gagged. From my own experience I gather that the average victim of his, while the buzzsaw seems cutting through his bones, would feel better if he said nothing and sawed wood.

A farmer who keeps adding acres to acres is generally supposed to be growing rich. A dentist, on the contrary, may be accumulating *achers* and *achers* all his life without an apparent increase in prosperity. This is probably due to the fact that the *achers* thus transferred are *achers* for growing purposes.

From the sleight-of-hand performances he executes, the dentist has sometimes been confounded with the prestidigitator. One of his favorite tricks is to hide a piece of the yellow metal in the patient's mouth and then take it out of his pocket.

A dentist was once mistaken for a building contractor. After he had been digging away for half an hour or so in the hollow sham of a tooth his patient, who happened to be Mr. Dooley, jerked the gag out of his mouth, jumped from the comfortable plush chair and said:

"Excuse me, sorr! I guess I'm in the wrong office."

"Why, didn't you say you wanted to see a dentist?"

"Shoor! But ye are not a dentist, begorra!"

"Certainly, I am." ,

"Ye are, are ye? Ay thawt ye were ixcavatin' fer a buildin'."

Having reassured his man, the dentist kept digging away. Shortly afterward, he was again interrupted.

"I'm just about through now," said the knight of the forceps, coaxingly.

"Put in the gas?"

"Yes, sir."

"Cement basement?"

"Yes, sir."

"Ay could fail ye sthringin' the illecthric wires."

"Yes?"

"Well, thin'," said Mr. Dooley, "if ye sthay in there much longer Ay'll be afther chargin' ye rint."

I will add a couple of incidents from my personal contact with members of your profession.

A couple of weeks ago I had a tooth that turned revivalist. It preached so powerfully about the root of evil and the badness of its fellows that it well nigh made a jumping Methodist out of me. I asked a friend what dentist he would recommend.

"You might try Dr. Gaswell," said he.

"Think he's good?" I inquired.

"No," said he, "but he can *cure* that kind of case."

I decided to act on his suggestion.

"Wait a minute," said my friend, "I'll give you a testimonial for him." So he scribbled these lines on the back of his business card:

I'd swear he's gentle as a lamb,
And his work is far from bum,
But he stuffed my mouth so full of dam
I couldn't cuss, by gum!

We who have known Dr. Tongs since before the war—*i. e.*, before

his marriage—never had either hope or fear that he would ever marry. We knew he would never stop talking long enough to hear whether the lady in question said yes or no. Well, he didn't. I understand he sat up four nights and wrote out the following proposal:

Oh, why should we two remain alone?
Be flesh of my flesh and bone of my bone!
Without you my heart is an aching void,
Which, filled, would give happiness unalloyed.
You know I am awkward and rather coy,
So I send this note by a messenger boy.

She wrote back:

Dear doctor, I'll fill it for you, with joy,
And since you are absent, I kissed the boy.

So Dr. Tongs got his filling, which he considers as good as gold. The wedding was one of the crowning events of his dental career and the job is the only one he is willing to guarantee for a lifetime.

IN CONCLUSION.

There are many good people who believe that in the hereafter we are to continue in the same associations and environments as in the present world. Now, I don't know as to that, but I shouldn't like to think that dentists will go to where there is weeping and gnashing of teeth while only their patients will wear the golden crown.

ABSTRACTS AND SELECTIONS

A NEW FILLING MATERIAL.

HARRY E. CUTTER, D.D.S., CAMBRIDGE, MASS.

It was in April, 1905, that I first learned of the new filling material Ascher's Artificial Enamel. Upon procuring a sample of it I inserted experimentally several fillings in the teeth of one of my assistants. These fillings closely matched the teeth in which they were placed both in color and in enamel-like appearance, and the result was very satisfactory. I then obtained more samples, and at the next meeting of the Boston Society for Dental Improvement, which was held with Dr. E. G. Eddy, at Providence, in May, I distributed them among the members.

After this I inserted, from time to time, in the teeth of some of my patients, a few fillings, telling them that it was a new material, and while it had a good appearance I knew nothing of its durability, as it had but recently been brought to this country. I kept a special record of these fillings, separate from my regular records, so that my attention would be called to them when these patients came in again.

It is now February, 1906, nine months since I first began using this material, and while this is not long enough for a thorough test, it has been gratifying to find that none of the fillings, which I have since examined, show any signs of dissolution, and many were in mouths where oxy-phosphate fillings would have begun to wash out within that time.

Being desirous, however, of learning directly of the experience of dentists in Germany who had been using the earlier material for some time, I wrote to Dr. Michaelis, of Berlin, and in reply received the following letter from Dr. Ascher:

BERLIN, 17 June, 1905.

Dr. Harry E. Cutter, Cambridge:

Dear Doctor—Dr. Michaelis who passes at this time a season in Karlsbad, sent me your letter, and, as I am the inventor of the

material which you give your interest, I will try to answer your letter as well as possible for me.

1. A dissolution of the material is perfectly excluded if it is worked in a correct manner.

2. It adheres closely and forever to the sides of the cavity, but a carefully prepared cavity will render failure absolutely impossible.

3. For coners and cutting edges the material was until now not yet strong enough, but we have just now improved it and in a few weeks it will appear on the market.

Samples of the improved filling I sent to prominent men of the profession in Europe six weeks ago gave splendid results in all cases of large contours.

As soon as the new preparation will be manufactured at large I shall send you a few samples, and I am convinced the results you will get with it would give you perfect satisfaction.

Very truly yours,

HUGO ASCHER.

The material is exceedingly hard, in fact it is so difficult to cut, even with the sharpest burs, that in very deep cavities, where its removal may become necessary, a softer material should be placed beneath it. I have found that about the easiest way is to grind it with stones.

It should be thoroughly and carefully mixed and spatulated, gradually adding more and more powder until the mass is quite stiff and begins to stick and pull on the slab, when it is ready to be packed into the cavity with firm pressure. This is very important, in order to get successful results. The best spatulas that I have used are the double-ended bone ones. These, though broad and stiff, are more flexible and not so brittle as the ivory ones, and are also less expensive. A metal spatula darkens the material. If the spatula and mixing slab are at once dipped in warm water after a filling has been mixed, the material is easily removed, otherwise it is somewhat difficult to do so, especially from the spatula.

If a matrix is used, great care is required to carry the material to the deepest parts and edges of the cavity. It seems to me a little hard to force it into remote corners. It is desirable to make the cavities of a retentive shape, although the material seems to be quite adhesive. Large approximal or contour fillings in bicuspid and molar teeth should, if possible, be well seated and anchored so that the force

of mastication will not dislodge them, and they should be just clear of the bite when finished. If they are to replace oxy-phosphate fillings, a large part of the latter should be removed, in order that there may be more than a thin veneer of the new filling.

The material should be treated somewhat like porcelain; that is, always have, if possible, square and thick edges, and the fillings should be finished perfectly flushed with the surface of the tooth, otherwise the thin edges overlapping the cavity will chip away afterwards. In finishing approximal fillings in the incisors I have used thin strips of photographic film lightly smeared with white vaseline on the glossy side. I hold the strip tightly against the filling in tooth and then slowly draw it one way to remove the surplus and make the filling flush with the surface of the tooth. This has to be done carefully, and just before the filling begins to harden so as not to displace it, as the material will stick to even a lubricated strip. This method was suggested to me by Dr. R. R. Andrews.

Even in an unpolished condition these fillings have an enamel-like appearance when wet with the saliva, quite unlike oxy-phosphate fillings. A glossy finish, however, can be obtained by burnishing repeatedly with an agate or steel burnisher, lightly smeared with vaseline while the filling is hardening. This is particularly satisfactory in crown fillings in bicuspid and molars, a ball burnisher being used. I think that this burnishing also makes a denser and better filling. Keep the fillings dry for fifteen minutes, or, after they have begun to harden coat them with a solution of gutta-percha and chloroform, or smear them with a mixture of white wax, gum damar and resin, using a hot instrument, as recommended by Dr. Loveland. Steel instruments tend to darken the fillings, but this is usually not objectionable.

If the teeth are carefully matched in color and the fillings are nicely finished, they will rival porcelain inlays in appearance, since they blend with the surrounding tooth substance with no joint lines about them. When hard the fillings have the characteristic feeling of porcelain when examined by an explorer.

There are ten colors, but a good selection might consist of No. 1 cream, No. 8 dark brown, No. 2 pearl gray, No. 10 light brown, No. 4 brownish yellow. The shades are more likely to be too light than too dark when inserted in a tooth, therefore No. 8 and No. 10 are very desirable, either to be used alone or to modify other shades.

There are similar preparations now upon the market, but so far as I have been able to learn, Ascher's Artificial Enamel is the original. It is protected in the United States by two patents.

In this material I believe we have been furnished with something for the filling of teeth which surpasses in appearance anything that we have had before, other than porcelain. It is easily manipulated and can be used in places where the extensive cutting, often necessary in using porcelain, would be avoided. If it is proved that this new substance is really insoluble and is in all respects permanent, then we have in this an ideal filling material.

Dr. William Y. Allen, Boston: I have been greatly interested in the papers of Mr. Smith and Dr. Stanton, in which the chemical properties of this new filling material have been so ably discussed; but I shall not attempt to add to that phase of the subject except to call your attention to the fusible property of the enamel, as shown in the specimen I shall pass around for your inspection. This specimen I mixed in the usual manner for a filling, and shaped it into the form of an incisor tooth. After hardening it was placed in an electric furnace and subjected to the degree of heat necessary to fuse the S. S. W. porcelain inlay bodies. The specimen is glazed and bears a strong resemblance to fused porcelain, with but little shrinkage.

My practical experience in the use of Ascher's Artificial Enamel dates from a conversation that I had with Dr. Cutter last November and to whom I am indebted for first calling my attention to this very interesting substance. Dr. Cutter's enthusiastic account of his own experience in its use, during a period of six months, impressed me so favorably that I immediately began to investigate its merits for myself.

One of my first cases was that of a patient for whom I had made an appointment to crown the root of a left superior first bicuspid. The entire palatal wall had broken away close to the gum margin, while the buccal wall, though very frail, was still intact and of a good appearance. With the patient's consent I decided to try the experiment of building up the missing portion of the tooth with Ascher's Artificial Enamel, and thus save, if possible, the natural buccal wall, which operation was successfully accomplished with the aid of a band matrix carried well under the gum margin on the palatal side of the root. The result was highly satisfactory, both in

the simplicity of the operation and the natural appearance of the tooth when the work was finished. After two months of reasonably hard usage there is no visible sign of wear, even on the occlusal surface of the filling. Other cases where I have used this material show equally good, if not even better, results. So many are the excellent qualities of Ascher's Artificial Enamel that it now seems to be only a question of its durability to demonstrate whether or not a new era has begun in our methods of restoring carious teeth to usefulness and a natural appearance. That a very distinct advantage has been made in this direction, there can no longer be a reasonable doubt.

NOTE.—Twelve months after this report the filling still presents the same good appearance.

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A HIGHER IDEAL IN CROWN AND BRIDGE WORK.*

BY A. PERCIVAL BURKHART, M. D. S., BUFFALO, N. Y.

At the leading dental meetings which I have attended for several years past, there has been a marked absence of discussion of crown and bridge work. I regret exceedingly that so important a branch in dentistry has been overshadowed by porcelain and gold inlay work.

Inlay work has its merits and I shall not condemn it, because I believe in it, and may add, when used with judgment, is truly one of the jewels in dentistry. Crown and bridge work, however, has been tested for a sufficient length of time to judge whether it is worthy the attention of the dental profession. But one answer can be given, and that in the affirmative. Dr. George Evans, in his latest work, says: "Modern artificial crown and bridge work belongs to the department of dentistry formerly termed 'mechanical,' but the judgment, skill and scientific information required places it far above ordinarily mechan-

*Read before the New Jersey State Dental Society, Asbury Park, N. J., July, 1906.

ical dentistry, which has sunk to a low estate since the introduction of vulcanite."

To digress a moment, let me say: My remarks today are entirely directed to that particular branch of crown and bridge work known as fixed or stationary bridge work, although in my daily practice I do not confine myself to this particular style altogether. Conditions must, of necessity, determine each case. Removable crown and bridge is a valuable adjunct, and oftentimes is the only artistic and useful work to construct. In a spirit of enthusiasm, I venture to say that crown and bridge work, when honestly recommended and properly and artistically constructed, is a credit to the skilful practitioner; a blessing and comfort to patients. The interests of the patient should be the guiding principle in all our operations, and, after careful examination, plainly and distinctly indicate to him the best system suited to his case. To arrive at an opinion, the mechanical portion of the operation is not the only element to be considered. Pathology and therapeutics must not be overlooked if we mean to treat our patients as we would like to be treated were we undergoing a similar operation. To arrive at a safe conclusion in nearly every instance in selecting a system—the same care should be exercised such as the skilled orthodontist pursues, namely, the obtaining of an accurate, model of each jaw, and occluding them for careful study. Plaster models afford an opportunity for studying restoration of features and tooth structure, and correct occlusion of the intended artificial, with the natural organs.

THE ETHICAL ASPECT OF CROWN AND BRIDGE WORK.

Crown and bridge work has its dark sides, because, too frequently, by unscrupulous and avaricious men, it is employed when other means to a certainty are indicated. This branch has been, and is daily being abused, more than any other in dentistry, and I therefore believe it the duty of every honest and skillful practitioner, by word and act, to aid in elevating it to a higher plane.

You may ask, "how is this branch so grossly abused?" My answer is, faulty and carelessly constructed work which fails to bear the stamp too frequently of honesty, and is inserted in the mouths of patients and by them accepted, being unable to note the faulty construction,

broken and checkered porcelain pin facings or to detect ill-fitting caps and shell crowns.

A dentist who will insert a single crown or bridge upon an inaccurately prepared abutment, and depend almost wholly upon the cement to keep the crown or bridge in position, is not honest with himself, and certainly has not treated his patient as he would like to be treated were he undergoing a similar operation.

Honesty toward patients, conscientiously prepared abutments, accurately fitted caps to abutments, the very best materials, artistically constructed work, and humane treatment, are some of the requisites which should govern every dentist.

Gentlemen, let us, therefore, as ethical men, inject into our daily work the highest ideal of manhood and skill, and with each succeeding day, add to our experience, ever seeking to attain to a high degree of accomplishment in this particular branch.

Too frequently we hear youthful dentists say: "Oh, I'm an expert crown and bridge worker." With due respect to youth and ambition, in all kindness let me say: It takes more than a month, or a year, to become an expert; it takes years. To insure the highest degree of success, to mechanical skill must be added daily experience, pathological consideration, and therapeutics, and the combination of these factors lead to success in crown and bridge work. This remark is based on observations of my own work, covering a period of over twenty years, and that of many of my esteemed professional brethren. With this in mind, I appeal to the young men in the dental profession, to give their individual and careful study to every case coming to their hands, and put forth their best efforts in the construction of this particular work, and indeed the same thought applies in the production of mechanical work of all kinds.

The habit so prevalent in the dental profession of employing dental laboratories almost exclusively, is not conducive to the attainment of skill and experience, especially among the younger element of the profession.

I shall not take up your time by going into a general detail of the methods essential for the full construction of a bridge. I shall only take the liberty of bringing to your notice several mechanical considerations.

PREPARATION OF ABUTMENTS.

Having carefully fixed in my mind the crown and bridge I desire to construct, I proceed quickly and as painlessly as possible to the reduction of tooth substance, having in view the proper shaping of an abutment, or abutments. Much valuable time may be saved, and the operation shortened, by adjusting, whenever possible and practicable, the rubber dam over the teeth to be reduced, and here comes in one of the points where humane treatment is indicated. Therefore, previous to the adjustment of the rubber dam, treat the margins of the gums surrounding the necks of the teeth with cocaine, and thus the rubber dam clamp and ligature can be deeply depressed around the neck of the teeth and thereby the greatest possible exposure be obtained for the rapid reduction of tooth structure, insuring the more accurate preparation of the abutment. Teeth thus protected and free from saliva, afford superior opportunities for rapid work and accurate shaping of abutments. This method will be found particularly useful in locating Logan, Davis, Twentieth Century, White's, or any other make of all porcelain crowns on the six anterior teeth. While thus reducing tooth structure, compressed air becomes a factor for humane treatment. My assistant directs a stream of cold air, thus preventing the overheating of the tooth being operated on. I do not want it understood that I use the rubber dam in all cases. Circumstances govern. For the reduction of tooth substance, I use knife-edge carborundum wheels of varying sizes made by Lee, Smith & Co. With the sharp knife edge one can slice the bulging portions of bicuspid and molars on anterior and posterior approximal surfaces, and likewise on labial and lingual sides, and this done, the crowns will almost be in the form of a square. Next carry the now blunted disks backward and forward lightly over the occlusal surface, thus avoiding long continued pressure and undue friction on one spot. This class of disks will do away with the severe jarring which a coarse stump wheel produces on the nerves of patients.

Having reduced the sides and occlusal surfaces of the tooth, I next with sandpaper disks complete the final shaping and polishing of the abutment. The occlusal surface of bicuspid or molar should be as near level as an accurate eye and skilled hand can produce. Uneven surfaces, or pivoted points on occlusal surfaces are factors in loosening of single crowns, and even bridges.

One of the great sources of failure in crown and bridge work is the defective and slovenly prepared abutment. If the teeth are absolutely too painful for patient to bear, then by all means use pressure anesthesia to reduce sensitiveness, and then the abutment can be accurately shaped. If an abutment requires filling, avoid cements; use a hard, quick setting amalgam, and when thoroughly hardened, complete with nicety the abutment.

After the preparation of the abutments, our next step is to construct Richmond or shell crowns and dummies, but I shall not attempt to discuss this technic, only so far as one is concerned. I allude to bicuspid shell crowns, and under certain conditions sometimes a cuspid shell crown. To avoid a large display of gold, I have for years frequently employed pure platinum for this class of crowns, the body or barrel portion platinum, and the cusps struck up out of pure gold and properly reinforced. The eye catches the gold cusp which appear like a filling, and the platinum being of a lighter or grayish shade, is hardly observed.

PORCELAIN FACED CROWNS.

In the construction of the Richmond crowns, in fact any style of crown requiring a pin facing, the greatest care must be exercised to have the porcelain pins and backing absolutely clean, and if the porcelain has been ground, those parts should be thoroughly polished. I believe it bad practice to bend the pins, clamping them on the backing, because it strains the porcelain.

In building a bridge my rule is to construct each tooth, or dummy, by itself. This done I assemble all in proper position on the articulating model, leaving for final soldering the joints between parts only, and thus with a small quantity of solder, the bridge is completed, and the expansion and contraction incident to soldering reduced to a minimum. This process takes a little more time, but, gentlemen, it produces more satisfactory results.

For purposes of greater accuracy, all abutment pieces should be steadied before taking bite and impression by coating inside of caps with wax, and when seated, thoroughly chilled. Then secure bite, careful plaster impression, a sump model, assemble all parts, invest and solder. After taking the impression, boil out the wax in the caps, and then while running sump model, place in each abutment cap perpendicularly a good sized carpet tack, and then complete

the model. In case of breakage, the tacks remaining in the main portion of the model become guides to accuracy in the replacement of broken parts.

The most unsightly bridges which have come to my notice are large, upper arch bridges usually located on the two cuspids and molars. To produce artistic results in this class of bridges, I have adopted the following method: With all caps steadied on the abutments, the bite is procured and followed by an accurate plaster impression. Remove the wax from molar caps, but leave a slight amount in the cuspid caps and around the pins and then run a sump model, and when hard, prepare and place same on articulator. After removing the wax bite, solder a platinoid or gold bar to the posterior portion of the cuspid caps extending from cap to cap. While soldering, the wax in the caps and pins will disappear, and with a little force caps and bar will come off together. On the model and directly under the bar, and between the two caps, burnish some tea lead to afterward prevent wax from adhering to the model, and now return caps to position. Next, select six anterior plain teeth, such as are used in rubber work and wax them to caps and bar, thus forming a trial case. When arranged, try in patient's mouth and on this trial plate by fitting and trying may be secured correct length and width of teeth, proper shade, and the general expression well studied; then the selection of proper facings becomes an easy matter. Next, remove the trial teeth on the cuspid caps, after carefully articulating same, then remove from the bar the four incisor trial teeth and wax. Now take from the model the two waxed cuspids, invest and with solder finish the backing to contour, and when cool remove from investment, saw off the bar from each cuspid, shape and finish and return to model and then the assembling of the incisors becomes easy, because the cuspids become accurate guides, they having been previously tested, and along lines which permit of no mistake. A bridge constructed in this manner will not be an unsightly affair. This method eliminates all guess work.

INVESTING CROWNS AND BRIDGES.

Indifference and slovenly methods used in investing crowns and bridges, produce too frequently unsatisfactory fitting bridges, and result in broken and checked facings. The habit of pushing a case into a soft, moving mass of investment, which, in turn, rests on an

uneven or soft surface, such as blotting paper, or even common paper, is bad practice. Proper sized boxes, from the ordinary sandpaper disk boxes to well selected larger sizes, should be used. The boxes filled about two-thirds with investment material will firmly hold, and securely encase every line and crevice of the invested bridge or crown. Save your sandpaper disk boxes; they are useful when investing a single crown, or small bridges.

In the construction of crown and bridge work, I have endeavored to bring to your notice several methods of exactness, not new to many of you, and yet I had a purpose. It is more than likely that many within the sound of my voice exercise even greater care in the construction of the class of work under consideration, and if the latter be true, have your conscientious efforts, when using the various makes of pin facings, and ordinary crystal cements for cementation, given you always ideal work, personal satisfaction, and peace of mind? So far as I am concerned, were the question put to me, I would answer in the negative.

Pin facings are our greatest source of annoyance. After we have put forth our best and most skillful efforts, a bridge comes from the investment with one or more checked, or even broken facings, and the sensitive and conscientious man becomes sick at heart. The pin facings so largely employed are, with slight improvement, the same we have used for years in the production of artificial teeth placed on gold and silver plates. They may do for the latter work, but are undesirable for crown and bridge work, where of necessity many times extremely large quantities of plate and gold solder are used. While this defect is well recognized, there is still another and it is this: Pin facings are not properly proportioned. They are usually too narrow at the neck, as compared with the incisal edge, and as a result, unsightly V-shaped spaces between the teeth result when the case is completed. It would seem that the manufacturers could at least correct this one very glaring defect.

DETACHABLE FACINGS.

Naturally, the question arises, is there any product which overcomes the defects in pin facings? If there is, the facing must be detachable, and interchangeable, consequently subjected to no heat at all during the process of soldering. Also the facings must be of proper

proportions, wider at the neck, thus overcoming the unsightly V-shaped open spaces to which I have called your attention.

Always on the lookout to take advantage of every improvement any advance in dentistry, I hailed with delight the Mason facings, when they were placed on the market. It was a product never fully appreciated by the profession. Since the introduction of the Mason facings, advances have been made in the production of detachable facings, and among the advances, I allude to the Steele facings, made at Columbus, Ohio. Two years ago I began using these facings, and with very satisfactory results. I now never worry over checked facings, nor broken facings, consequently I have peace of mind.

With the lapse of time I have no doubt that American brain and enterprise will even surpass the product named, but until that time arrives, the Steele facings offer to the artistically inclined bridge worker advantages which he can not consistently pass by. Stop and think for a moment what it means to us to be able to use a facing which does not receive the heat incident to soldering process. You will realize that it means no discoloration of facings, and a bridge when completed absolutely free from checked and broken facings, unsightly gold tips, and no display of gold between facings, the latter due to the more uniform width from incisal edge to the neck of facing. Again, bridges can be inserted almost immediately after extraction, and later, when absorption of the gums has taken place, the facings can be replaced with longer ones without removal of the bridge. Time is saved in the construction of bridges, and if repairs are ever needed, they can be made easily and quickly.

Sometimes brother dentists have said to me, "I prefer to use pin facings because they are cheaper than interchangeable ones." The dentist who reasons thus makes a mistake, and the quicker he divests himself of the idea of the cheapness, when constructing crown and bridge work, the better for him. I think that the very best materials should be used by every ethical dentist; he thereby places himself on a higher plane, and has the conscious satisfaction of having given to his patient the best that money could buy, and he in turn will then be justified in demanding a fee somewhere near commensurate with his best efforts and expenditures.

CEMENTS AND CEMENTATION.

While pin facings have been a source of annoyance, many times,

misfortunes from another source have come to me. I refer to the cements used in the cementation of bridges. During many years the cementation of crowns and bridges has been with me a subject of close study, and many, many times I have wished I might with ease remove a crown or bridge. One of the causes I may say was, for instance, this complaint: "Doctor, that bridge you set in my mouth bothers me, because one or two of the abutments ache at times, are sensitive to heat and cold"; or the patient has reported a cap on an abutment loose, while the others remained perfectly firm. To remove a bridge under such conditions (and yet safety and duty suggest it) means tremendous labor, particularly if it includes one or more Richmond crowns. The conditions mentioned have confronted nearly every dentist, whether of limited or extensive experience. Many valuable abutments are destroyed because of the difficulty attending the timely removal of bridges set with crystal cements. So far as single crowns are concerned on anterior roots, for years I have employed gutta-percha, and with most excellent results, but for bridges up to about three years ago, I continued using the ordinary crystal cements. Three years ago I began using Evans' gutta-percha cement for setting bridges, using it cautiously at first, but now I use it almost exclusively. As a result of my observation and experience, I now find myself in a position easily and quickly to remove a bridge without injury to an abutment. I now make it a rule to instruct my patients to return for an examination twice each year, and if dangerous symptoms present themselves, I remove the bridge and perform such services as will best benefit my patient. Had I used the cement named earlier in my practice, and observed the rules I now do, I am sure numerous valuable abutments which were lost would now be in a good state of preservation.—*Items.*

**ACCESSORY SINUS DISEASE AS VIEWED FROM THE STAND-
POINT OF DENTIST AND RHINOLOGIST.**

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The accessory sinuses in general and the maxillary sinus in particular are of especial interest to the dentist on account of the close relation of the latter to the teeth, and of it in turn to the other sinuses, while the rhinologist is equally interested in all.

Our present anatomical knowledge of these cavities we owe mostly to the few anatomists who have interested themselves in the structures of the face. First among whom should be mentioned Zuckerkandl, others being Hajek, Turner, Killian, Luc, in Europe; Cryer, Holmes, and a host of others in this country.

The maxillary sinus, the largest, most dependent, and withal the most frequently affected, and probably the most easily treated, begins its development about the fourth month of fetal life, and although no exact time can be stated, it is probably fully developed by the twenty-fifth year. It is located in the body of the superior maxillary bone, at times extending into the malar. It is pyramidal in shape, with base toward the nasal cavity, and apex directed upward and outward. Its floor lies in relation to the teeth, the nasal wall to the nose, and through this wall we have the natural opening into the middle meatus.

From a pathological standpoint the floor and the nasal wall are the only ones of importance, excepting that the roof, which is also the floor of the orbit and the anterior or facial wall, are liable to accidents.

The ethmoidal sinuses or cells are located in the ethmoid bone in the upper part of the nose between the orbits, and only separated from the brain by the cribriform plate. Some cells are also completed by the articulation of the ethmoid with the frontal and sphenoid. In development they keep pace with the antrum. They are divided into two sets, while some anatomists divide them into three for convenience; we will adopt the former.

The anterior cells by their ostia open into the naso-frontal duct, through this into the hiatus semi-lunaris in the middle meatus. The posterior cells open into the superior meatus.

The sphenoidal sinus is located in the body of the sphenoid bone, and is usually cuboidal in shape, although it may extend into the greater and lesser wings of the bone. It first appears about the third year, and is fully developed about the eighth.

From a pathological standpoint it is important as being in such close proximity to the brain, and especially the optic commissure, which lays on its roof—disease in which sometimes causes meningitis, or blindness. It opens into the superior meatus with the posterior ethmoid cells.

The frontal sinus is located in the frontal bone between the plates, and, as a rule, in the perpendicular portion, although it is quite frequently found running back between the plate over the orbit. It is not present until after the second year, and reaches full development about the eighteenth year.

There are two ways in which infection may travel to each of the accessory sinuses, and both ways are probably given full credit excepting in the case of the antrum.

The reason for the diversity of opinion regarding the antrum is due largely to a misunderstanding of the anatomy of the region.

In the *Annals of Otology, Rhinology and Laryngology* for March, 1904, Richards quotes from a paper by Dr. A. Strubel, of Dresden, regarding original work done by him, in Zuckerkandl's laboratory. His results are of interest. After injecting the posterior alveolar arteries, the specimens were decalcified, imbedded, and sections made. Examination showed that we have three systems of vessels: a long narrow one, extending to the deeper layer of the mucous membrane of the antrum, the periosteum, a coarse-meshed system of the spongy bone of the upper jaw, and a fine-meshed one supplying the alveolus and the covering of the root tooth. Individually they were very characteristic, but that with one another they had such close connection that it was difficult to differentiate between them.

The junction of the muco-periosteal vessels with those of the face is brought about through numerous short, thick vessels, coursing at short intervals in canals at right angles to the direction of the bone, while the obliquely coursing arteries of the moderate size,

which bring about the communication between the blood system of the spongy bone and that of the alveolus, are reinforced by a large number of the finest blood vessels.

Here it is seen that the fine capillary system of the spongy bone is connected with those of the alveolus, and proves substantially the theory that the three systems are one and the same.

Therefore, we see that the lining membrane of the antrum, the alveolus, the teeth, and the entire superior maxillary bone with the mucous membrane of the mouth, are supplied by one system of vessels which communicate so closely that infection may travel from the teeth or mouth without there being direct continuity of diseased with healthy tissue.

This brings us to the point as to whether disease is of dental or nasal origin. As to the whole taken together, we know that constitutional diseases have a very pronounced effect, and probably have a great deal to do with lowering the vitality of the tissues in this part of the body. Authorities are not in accord as to the most common source, although the larger number, if not all, believe the teeth as well as disease of the nasal mucosa to be etiological factors, and B. Frankel, Moritz, Schmidt, Semon, C. Heath, Grunwald and Bayer assert that disease of the teeth is the most common cause of diseased antra.

On the other hand, equally competent authorities as Zuckerkandl, Krause, Hartman, Bosworth, Cryer, assert that in the majority of instances disease results from disease of the tissues of the nasal cavity. Zuckerkandl and others have held that infection traveled from the nasal cavity through continuity of mucous membrane, while Bosworth disputed this, saying that it was due to a swelling of the mucous membrane around the ostium, preventing the escape of secretion, but as this would have to be infected before you would have an empyema, it would amount to the same thing.

Herbert Tilly, of London, in a recent article, reports three hundred cases seen in the last ten years, and in only one of which sound teeth were found.

Bodecker thinks teeth the most prominent factor.

Kyle believes the majority of cases due to diseased teeth.

B. Frankel states as a result of his experience, the larger number of cases by far are due to diseased teeth, and that he had never

seen a case in which the corresponding tooth was not diseased, or had been previously extracted.

Lermoyex states that disease of this cavity is more frequently of dental than of nasal origin.

On the other hand, Krause considered that carious teeth did not bring about empyema.

Jeanty, in twenty-one cases where there were diseased teeth, with twenty-two cases of empyema, considered that in no case were the teeth the cause.

Killian believes infection not due to teeth as often as reported.

Hejek, in approximately two hundred cases, found only thirteen of dental origin.

Richards reports having found 64.6 per cent of nasal origin, 29 per cent dental origin, 3.2 per cent traumatic, 3.2 per cent luetic.

Cryer, in his work, "Internal Anatomy of the Face," says that more teeth are diseased as the result of empyema of the antrum than antra infected from diseased teeth.

As for nasal origin, the disease which produces most trouble in this way is influenza, although any of the wasting diseases, as acute fevers, diabetes, syphilis and tuberculosis, may be causative factors. Ordinary colds, as they are called, which are caused by a lowering of vitality of the mucous membrane of these parts, on account of the interference with the equilibrium of the circulation, and thus preparing a good medium for the growth of bacteria, are due to no single germ, but to mixed infection. These diseases produce, first, an inflammation of the mucous membrane covering the inferior and middle turbinates and that located between them, thus allowing the germs to multiply in the tissues around the openings of the antrum, the anterior ethmoid and frontal sinus, any or all of which may become diseased as infection progresses.

Taking, for instance, a case where the ethmoid alone is affected, it can easily be seen that the infection may travel upward, affecting the frontal sinus through the infundibulum, or downward passing through the ostium maxillary into antrum. If not in this way it may travel by a more direct route, that is, by necrosis of the thin walls of the cells nearest the antrum, or frontal sinus. After the antrum is infected we may have disturbance of the teeth, due to pressure on the nerves or direct infection of them, as in many cases there are defects in the walls of the canals in which they are located.

Should a devitalized tooth be present we have a weak spot to be attacked, and to which the patient refers as a painful point.

In the observation made by medical men the teeth are not examined as thoroughly as they should be, or would be if dentists were called in consultation, for when we say diseased teeth it may mean nothing unless the caries has gone sufficiently far to allow infectious material to travel through the pulp, or unless the gums and process are diseased, which fact is entirely overlooked; so far as I can learn, we have no chance of infection.

However, if Strubel's observations count for anything, we may get infection from the mucous membrane, even though we have sound teeth. As the antrum increases in size, according to the rapidity of the eruption of the teeth, I fail to see how we can have empyema of the antrum of dental origin much before the fifteenth year. Ingerson reports a case which was at first thought to be antral disease in a child of four years, but which he afterward concluded was a dentigerous cyst. Two teeth were present. Weimer reports a case of a child of three and one-half years with two temporary teeth and sarcomatous mass between mouth and orbit. This was probably not in the antrum, but had created a space for itself, afterward involving the surrounding tissue.

In nine cases of my own and three seen in consultation, four cases were of undoubted dental origin. Four developed after attacks of influenza, in one of which there was a diseased root of a first molar. In another, the upper teeth had been extracted eight years previous to the first symptoms. The other two, which were acute cases, the teeth were found to be entirely sound. In one of these, however, the pain was at first wholly referred to the teeth. Three had been troubled with ethmoidal, or frontal sinus empyema for years, which dated back to severe colds or influenza. In one of the latter the frontal, an ethmoid, dated back ten years, while the antral disease had been present two and one-half years, at which time the pulp of a second bicuspid was devitalized and canal filled. In this case we may have a combination of dental and nasal, or, it may be, dental, notwithstanding the suppuration above.

In one syphilis was the cause of the sinus disease, but in this case antral discharge had ceased, though the ethmoids and sphenoids were still active and required operation. The teeth were all in healthy condition.

It must be borne in mind that diseases of the antrum may also cause inflammation of the tissues of the nasal cavity. Grunwald states that a permanent thickening of the median border of the upper surface of the lower turbinate is pathognomonic of suppurative disease of the sinus.

Another important point is that discharge need not necessarily be fetid, and that we may have profuse discharge, fetid or otherwise, without pain or other subjective symptoms.

[Since writing the above I have seen seven (7) cases of disease of the antrum, independent of other accessory sinus cases, and of this number five (5) were of dental origin and two traumatic. Of the latter one was infected by having the whole floor taken away when a dentist extracted a tooth, there being osseous union between the second and third molars, and pulp came away with them. The second case received a kick from a horse which fractured the floor and drove two teeth in to the antrum.]—*Medical Brief*.

DYSPEPSIA AND CARIOUS TEETH.

The more complete the process of mastication the more readily will the saliva, and later the gastric juice, get at the particles of food to carry on the digestive process. Carious teeth tend to dyspepsia in two ways; firstly by interfering with mastication, and secondly by producing poisons which are swallowed with the food and which interfere to some extent with gastric digestion.—*Practitioner (British Dental Journal)*.

SUPPORTING A SORE MOUTH WHILE DRILLING.

Instead of supporting a tooth by ligature to prevent pain while it is being drilled, take modeling compound, soften it and make a splint for both lingual and buccal sides of the teeth to support the sore tooth while drilling. This will prevent jarring and also prevent pressure on the inflamed peridental membrane.—*T. L. Gilmer, Chicago, Dental Brief*.



NATIONAL SOCIETY MEETINGS.

National Association of Dental Examiners, Minneapolis, Minn.,
July 26, 27, 28.

National Dental Association, Minneapolis, Minn., July 30.

STATE SOCIETY MEETINGS.

Alabama Dental Association, Birmingham, May 14, 15, 16, 17.

Arkansas State Dental Association, Eureka Springs, May 29,
30, 31.

Connecticut State Dental Association, New London, April 16, 17.

Georgia State Dental Society, Atlanta, May 7, 8, 9, 10.

Illinois State Dental Society, Quincy, May 14, 15, 16, 17.

Maine Dental Society, July 16.

Minnesota State Dental Association, Minneapolis, July 30, Aug. 3.

Montana State Dental Society, Helena, April 12, 13.

Nebraska State Dental Society, Lincoln, May 21, 22, 23.

New Jersey State Dental Society, Asbury Park, July 17, 18, 19.

New York State Dental Society, Albany, May 10, 11.

Vermont State Dental Society, Burlington, May 15.

Virginia State Dental Association, Jamestown, Sept. 10, 11, 12.

Wisconsin State Dental Society, La Crosse, July 16, 17, 18.

INSTITUTE OF DENTAL PEDAGOGICS.

The executive committee selected New Orleans for the fifteenth annual convention, and December 30, 1907, and January 1 and 2, 1908, the dates.

ARKANSAS STATE BOARD.

The Arkansas State Board of Dental Examiners will hold examinations at Eureka Springs, May 27, 28, 1907. A. T. McMillin, secretary, Little Rock. The Arkansas State Dental Association will hold its annual meeting at Eureka Springs, May 29, 30, 31, 1907. Henry P. Hopkins, secretary and treasurer.

PREMIER CONGRESS FRANCAISE DE STOMATOLOGIE.

PARIS, AUG. 1ST. TO 5TH.

The "Société de Stomatologie," wishing to celebrate the 20th year of its foundation, has decided to organize a Congress of Stomatology in Paris which will be held from the 1st to the 5th of August, 1907.

This Congress will be the long awaited consecration of those professional ideas and scientific principles which our Society has always defended ever since its formation. Its aim will be to clearly demonstrate that Stomatology is a branch of Medecine,—a medical and surgical specialty, just as much as is ophtalmology, laryngology, etc., and requiring from its adepts a complete knowledge of medecine, and including all the scientific studies which in all countries are recognized as essential for the obtention of the title of "M. D."

Our "Premier Congrès de Stomatologie" sincerely hopes to be honored by your presence; for it is only by the united efforts of all our confreres from all other countries that its real value and significance will be established. Your presence will indicate the general character of our aims.

Yours very sincerely.

COMMITTEE OF ORGANIZATION:

Honorary Presidents: MM. Galippe et Redier.

President: M. Cruet.

Vice-Presidents: MM. Claude Martin et J. Ferrier.

General Secretary: M. Chompret.

Secretaries: MM. Béliard et Bozo.

Treasurer: M. Gires.

Members: MM. Amoëdo, Bachelier, Bacque, Béal, Beltrami, Besson, Bouvet, Bouyer, Bugnot, Capdepont, Gaumartin, Chemin, Courchet, I. Davenport, Dunogier, Faré, Fleury, Frey, Gaillard, Granjon, Hugenschmidt, Mainguy, Marais, Maurel, Montès, Noguá, Nux, Nuyts, Pietkiewicz, Pitsch, Queudot, P. Robin, Rodier, Rosenthal, Siffre, J. Tellier, Thésée, Thomas, Tourtelot.

THE MINNESOTA STATE BOARD OF DENTAL EXAMINERS.

The Minnesota State Board of Dental Examiners will hold its next regular meeting at Minneapolis, in the medical building of the State University, on April 2, 3 and 4, 1907.

All applications must be in the secretary's hands by 11 o'clock of April 2. Candidates will be furnished all necessary blanks and such other information as is necessary upon application to George S. Todd, D. M. D., secretary, Lake City, Minn.

ALUMNI CLINIC OF THE ST. LOUIS DENTAL COLLEGE.

The Alumni Association of the St. Louis Dental College (formerly Marion-Sims) wish to announce that their annual clinic will be held at the college building, Grand avenue and Caroline street, on Tuesday and Wednesday, May 7 and 8, 1907.

All ethical members of the profession are cordially invited to come and enjoy the festival of good things being prepared, and every member of the Alumni is especially requested to show his allegiance to the Association by his presence. Respectfully,

JOHN BERNARD O'BRIEN,

W. L. O'NEILL,

Committee on Publicity.

ALUMNI ASSOCIATION OF WASHINGTON UNIVERSITY.

The annual meeting of the Alumni Association of Washington University Dental Department (Missouri Dental College) will be held May 20th and 21st, 1907, at the college building, 2645 Locust street, St. Louis, Mo.

A number of prominent essayists and clinicians have been secured and an interesting and instructive program will be presented.

Adequate space has been secured for the various manufacturers' exhibits. This will be a noteworthy feature of the meeting. All ethical practitioners invited.

EXECUTIVE COMMITTEE CHAIRMAN.

DR. A. J. PROSSER.

DR. F. W. HORSTMAN.

DR. CHAS. HERBERT.

A NEW BOOK.

DENTAL FORMULARY: A Practical Guide for the Preparation of Chemical and Technical Compounds and Accessories as Used in the Office and Laboratory by the Dental Practitioner. With an index to oral diseases and their treatment, including the modern methods of local anesthesia. By Hermann Prinz, M. D., D. D. S., Professor of Materia Medica, Therapeutics and Pathology, Dental Department, Washington University, St. Louis. Editor of the *Dental Era*.

This is the title of a new work which is to be published in the early spring by the above author. To present to our readers a more adequate idea of the book, we quote the following brief extracts from its introductory:

"The many inquiries regarding formulas for technical and chemical compounds, or special methods of procedure relative to the treatment of oral diseases, received from dental practitioners, has been the prime incentive to prepare this volume. Its object is to furnish the practitioner and student with a reliable guide of technical information as needed in the office and laboratory of a busy practice. No claim of originality is made for all the recipes and formulas—such complexity is rarely the product of a single brain. Due credit has been given wherever originality could be clearly established. The material has been gleaned from English, German and French current literature and other sources. It has been carefully selected, modified, when necessary, and tested, in the majority of cases, to establish its reliability. The book is primarily intended to be a practical guide, consequently all scientific theories or matters of controversy have been purposely omitted."

Dr. Prinz, the author of the book, whose investigations and writings on matters pertaining to dental chemistry, pharmacology and therapeutics are recognized as authoritative on these subjects, seems to be especially fitted for this task and we bespeak a brilliant future for this volume.

MISCELLANEOUS

THE ODONTAGOGON LAW.

The skilful operator extracts more teeth with elevators than he does with forceps, for nearly every tooth that may be grasped with forceps may be saved.—*Cosmos, October, 1905.*

WHEN TO USE PORCELAIN INLAYS.

It is safe to adopt the rule that in all cases where utility and durability is of first importance, do not attempt to use porcelain, but where the cosmetic effect is the principal consideration, do not fail to use porcelain.—*Willis A. Coston, Kansas City Dental Journal.*

ROOT TREATMENT.

"Next time you want to get a liquid medicament to the end of a root canal do it this way: Flood the canals with the liquid, introduce a Downie broach and revolve it the wrong way; the blades of the broach will operate like the screw propeller on a steamboat. Let me know what you think of the idea."

It's "all right."—*Office and Laboratory.*

COCAIN INJECTION.

Before injecting cocain I paint the gum with campho-phenique, full strength, to prevent pushing septic matter into the gum with the needle. The campho-phenique, by benumbing the gums, aids in the anæsthesia.—*L. W. Jordon, Dental Summary.*

WOMAN DIES UNDER INFLUENCE OF ETHER.

Mrs. George Rauscher, of Rochester, N. Y., died in a dentist's chair September 3, while under the influence of ether, preparatory to having fourteen teeth extracted. A physician administered the anæsthetic and all of the teeth had been extracted when the woman died.—*Dental Summary, October, 1905.*

TOOTH-MASSAGE.

It is to my mind a question whether it is advisable by excessive use of pumice to rub away the enamel cuticle at points of the tooth which are susceptible to decay, as I have found that the destruction of this membrane involves an increase of susceptibility of the tooth to decay.—*W. D. Miller, British Dental Journal.*

THE PORCELAIN INLAY.

The fact that porcelain has a greater range of application, is more permanent, more compatible, harmonizes in color better, is more sanitary, and requires less physical exertion upon the part of both patient and operator than any other material, will force its universal adoption in time.—*F. E. Roach, Dental Digest.*

A METHOD FOR MAKING GOLD INLAYS WITHOUT A MATRIX.

After the decay has all been removed from the cavity, if extensive, fill with a quick-setting cement. Now prepare your cavity so that you will be absolutely sure that there are no under-cuts. Wrap a little cotton around a broach and moisten it with a slight lubricating oil. Protect the cavity from moisture with cotton, and wipe the cavity and portion of the tooth surrounding it with the broach moistened with the oil. Now pack your moss fiber gold into the cavity, being sure that all of the margins are covered perfectly. This can be done with hand pressure, and it is not desirable that there should be a high specific gravity. Burnish the gold perfectly over the margins, and insert a sharp instrument into the center of the filling and remove it. Cover the surface which would come into contact with the cavity with alcohol and rouge. Flow your solder to the desired contour and insert the filling and polish.

This will give you as perfect an adaptation as is possible to obtain with an inlay, also leaving a surface that the cement will adhere to much more perfectly than it would to the matrix, making an inlay with a better adaptation, better retentive qualities, and a saving of a great deal of time and inconvenience to the patient. This method I have followed for some time and find it entirely satisfactory.—*Arthur E. Peck, M. D., D. D. S.*

PERSONAL AND GENERAL

Union-Jefferson Dental Societies held its meeting February 12th at Carbondale, Ill.

Fire.—Dr. Roy McCulla, a dentist at Odebolt, Iowa, suffered the entire loss of his office and contents through fire; no insurance.

Adams-Hancock County Dental Association held its semi-annual meeting at Quincy, Ill., February 11th.

Dr. Henry A. Freeman, a dentist of Evanston, Ill., for many years, died January 29th. He was 59 years of age.

Dr. E. E. Vadnais, a dentist at North Adams, Mass., died February 2d of pneumonia. He was 33 years of age.

Dr. E. L. Swartwout, a dentist of Utica, N. Y., died January 27th. He had practiced for over fifty years in Utica.

Dr. R. E. Cason, a dentist at Cartersville, Ga., died from a stroke of paralysis, January 23d. He was 72 years of age.

Died in Dentist's Chair.—Edward Knight, of Youngstown, Pa., died while under the influence of chloroform in a dentist's chair.

Dr. E. J. Church, a dentist of La Porte, Ind., who formerly lived at Michigan City, died January 30th. He was 71 years of age.

Dr. J. L. Simonds, a dentist, died at Dorchester, Mass. He is said to have been the first dentist to use ether after its discovery.

Dentist Found Dead in Office.—Dr. R. C. Payment, a dentist 66 years of age, died suddenly in his office in Detroit, January 15th.

Fire caused a loss of \$75.00 in the dental office of Dr. S. S. Gasse in Washington, D. C.

Geo. A. Sweetnam, a dentist 30 years old of Chicago, was found dead in bed February 17th. It is supposed that he died of heart disease.

Dr. Arthur Rieck, a dentist at St. Paul, Minn., died in Winona, Minn., January 26, while visiting his parents. He was 33 years of age.

J. W. Simpson, a dentist, tried for the murder of his father-in-law at Riverhead, L. I., was found not guilty. His wife and mother-in-law had testified against him.

Died in Dentist's Chair.—Mrs. J. E. Swingle died February 14th at Manmattan, Kas., from administration of chloroform for the purpose of extracting teeth.

Dr. A. J. Grosvenor, a dentist at Springfield, Ohio, died January 24th of apoplexy. He was 55 years old and had practiced in Springfield for fifteen years.

Dr. Phillip Weil, a dentist on the east side of Buffalo, is dead. He was forty-four years of age and had been ill for two years.

Head of the Lakes Dental Society met February 9th at Superior, Wis. Drs. Malone and Owre, of the Minnesota University, held clinics during the meeting.

Dr. W. C. Derby, a dentist at Ellenville, N. Y., died January 31st. He had practiced his profession in his own building for fifty-four years, and was 78 years, old.

Died in Dentist's Chair.—Mrs. Luther Taylor, of Pleasant Plains, Ill., died in a dentist's chair at Springfield, due to effects of chloroform which was administered by a physician.

Peoria Dental Society will organize the Central Illinois Dental Study Club. A membership is limited to twenty-five. All members must be in good standing in the State organization.

Danville-Champaign District Dental Society held its sixth semi-annual meeting at Urbana on February 12th. A very extensive program was carried out. Dr. E. T. Johnson presided.

Several Societies Unite.—The Oklahoma and Indian Territory Dental Associations will be united into one society next June, if the plans of the members of the two societies are carried out.

Rock Island-Henry County Dental Society held their quarterly meeting January 22d. The feature of the meeting was two porcelain clinics by Dr. J. W. Gluesing, of Moline, and Dr. R. M. Pearce, of Rock Island.

Dr. Broderick, a dentist at Huntsville, Tex., committed suicide by shooting himself through the head February 6th. The deceased was about 60 years of age and had been in bad health for several months.

Teacher Extracts Teeth.—Miss Jennie Aughman, a teacher in the primary room of the Star Junction school, extracted 89 teeth for her pupils during the present year, according to a press dispatch from Uniontown, Pa.

College of Stomatology celebrated its twelfth anniversary January 22d in New Orleans, La. The following were elected officers: Dr. A. L. Plough, president; Dr. W. O. Talbot, vice-president; Dr. L. D. Archinard, secretary and treasurer.

Clinic at Iowa City.—The Alumni Association of Iowa University was held February 5th and 6th at Iowa City. Dr. E. A. Rogers, of Iowa City, president; Dr. F. B. James, Wilton Junction, Iowa, vice-president; Dr. J. E. Rose, Vinton, Iowa, secretary; and Dr. J. J. Booth, Marion, Iowa, treasurer.

Burglar Caught.—George Howerton, the man who admitted having robbed the dental offices of Drs. Nelson and Nichols in Leavenworth, Kas., and who was wearing when arrested an Eagle pin which he had stolen from the office of Dr. Nelson, was found guilty and sentenced to an indeterminate sentence of from six to fifteen years. The trial lasted but thirty minutes.

Dr. U. D. Billmeyer, a dentist of Chattanooga, Tenn., died in Asheville, N. C., recently. He was a graduate of the University of Michigan and later a member of the faculty. He was also at one time on the faculty of the Vanderbilt University. He was sixty-five years of age at the time of his death.

Northeast Missouri Dental Society had a very successful meeting on November 13th. The following were elected as officers for the ensuing year: President, H. L. Bridgeford, Macon; vice-president, H. R. Neeper, Hannibal; secretary-treasurer, E. S. Brown, Edina. The next meeting will be held at Kirksville.

Seriously Injured in Dental Office.—Miss Kittie Costello, a laundry girl in Denver, Colo., is in a dying condition caused by hypodermic injection of spirits of ammonia. Blood poisoning resulted and if the patient recovers amputation of the arm will be necessary. It was done for the purpose of resuscitation from a faint.

Dentist Retires.—Dr. W. S. How has retired from the profession after practicing fifty years. Dr. How was for many years located in Philadelphia, beginning the study of dentistry in 1851, graduating in 1854 from the Philadelphia College of Dental Surgery. From 1851 to 1883 he practiced in Cincinnati and invented numerous dental instruments.

Dental Library Open to Public.—The Ohio Dental Society at its recent meeting contributed \$300,000 to the Carnegie library at Columbus, Ohio, which together with \$500,00 raised among the Columbus dentists will be used to found a dental library which will be open to the public. A room in the Carnegie building will be used for the purpose.

Dentists Choose Officers.—After selecting Ottumwa as the meeting place for next year, the Southeastern Iowa Dental Association elected officers as follows: Dr. J. T. Martin of Muscatine, president; Dr. W. W. Vance, Ottumwa, vice-president; Dr. George W. Singluff, Burlington, secretary; Dr. W. E. Creath, Ottumwa, treasurer.

Dr. J. Hall Moore, an aged dentist at Richmond, Va., died Dec. 28. He was active in the organization and conduct of the Virginia State Dental Association, having been president of that society at one time, as well as corresponding secretary for many years. He was also professor of clinical dentistry at the Medical College of Virginia.

The Dental Association of Central Missouri held a meeting in Sedalia. The following were elected as officers for the ensuing year: President, O. C. McCullom, Clinton; first vice-president, P. H. Brame, Windsor; second vice-president, H. L. Mosier, New Franklin; corresponding secretary, C. E. Fletcher, Sedalia; recording secretary, N. U. Howard, Sedalia. The next meeting will be held at Sedalia.

First District Dental Society of Illinois.—The twenty-third annual meeting of the First District Dental Society of Illinois convened in Monmouth, December 11th with a two days' program. The following officers were elected for the ensuing year: President, Dr. J. W. Marsh, Keokuk, Iowa; vice-president, Dr. O. M. Daymude, Monmouth, Ill.; treasurer, Dr. J. M. Evey, Monmouth, Ill.; secretary, Dr. H. W. McMillan, Roseville.

Removals.—Drs. Willis Smith from Winchester, Ind., to Richmond, Ind.; V. W. Hunt from St. Paris, Ohio, to Tippecanoe City, Ohio; A. G. Wall from Dexter, Mich., to Chelsea, Mich.; A. R. Church from Hebron, Ind., to Valparaiso, Ind.; C. D. Pollard from Macon City, Mo., to Carthage, Mo.; C. B. Frank from Philadelphia, Pa., to New Chevenne

New Post.—Dr. Rex Rhoades of Chicago is at the barracks hospital at Columbus to take up his new duties as surgeon dentist. Dr. S. D. Boak, the present dentist, and his assistant, Relda Tighe, will leave for Cuba, where they have been ordered for service. Dr. Boak has been at the post almost a year. Dr. Rhoades was formerly stationed at the Columbus post.

Victory for State Board.—The petition of Evan B. Rosenkrans for a writ of mandamus to compel the State Board of Registration in Dentistry to issue a certificate allowing the petitioner to practice his profession as a dentist in Rhode Island, was turned down by a rescript filed by Presiding Justice Sweetland of the Superior court, Jan. 16, in which the board's demurrer to the petition is sustained.

Robberies.—Drs. Mills & Foote, Poughkeepsie, N. Y., loss not stated; W. P. Grandy, Pine Bluff, Ark., loss \$75.00; C. Mayfield, Pine Bluff, Ark., loss \$60.00; Land, Edgar & Black, Pine Bluff, Ark., loss from \$60.00 to \$75.00; C. G. Farrow, Little Rock, Ark., loss \$50.00; W. L. Buchanan, Washington, D. C., loss \$100.00; McNeill, Bessemer, Ala., loss \$50.00; E. F. Brown, Bessemer, Ala., loss not stated; W. W. Bolton, York, Pa., loss \$100.00; C. A. Hickman, Ft. Worth, Tex., loss \$25.00.

Convicts as Clinic Material.—The legislature of Utah is discussing the feasibility of allowing students to practice on the prisoners, according to a newspaper dispatch. Some people object to this as being cruel and barbarous and against the constitution, and some papers have been disagreeable enough to say that the amateur dentists of Utah should do as amateur dentists do everywhere else—practice on the public.

Paid Bill 28 Years Old.—There is still honesty in the world. Last week a lady who lives in Linn county called on Dr. M. P. Sigworth and paid him for a visit to her home one dreary, rainy night in November, 1878, when he was in partnership with his brother, Dr. H. W. She said she always had intended to pay it when she could without distressing herself. Anamosa Eureka.

Dental Clinic for Pupils is to be established in the Forty-third Street Industrial School, New York City. The clinic will be open daily from 1 to 4 p. m. for the 500 pupils of the school. Twenty prominent dentists have formed an association with Dr. Herbert L. Wheeler as its president, to support the undertaking. Similar work has recently been vigorously pushed in the public schools of Germany, where several cities have established free dental clinics.

Proves His Devotion.—A dentist received a call the other morning from a couple whom he soon had reason to believe were lovers. The girl had an aching tooth and as they entered the young man said:

"Now, darling, the worst is over. Just take a seat and it will be out in a minute."

"Oh, I darn't," she gasped.

"But it really won't hurt you at all, you know."

"But I'm afraid it will."

"It can't. I'd have one pulled in a minute if it ached."

"I don't believe it."

"Well, then I'll have one pulled out just to show you that it doesn't hurt."

He took a seat, leaned back and opened his mouth and the dentist seemed to be selecting a tooth to seize with his forceps when the girl protested.

"Hold on! The test is sufficient. He has proved his devotion. Move away, Harry, and I'll have it pulled."

She took the chair, had the tooth drawn without a groan and as she went out she was saying to the young man:

"Now I can believe you when you declare that you would die for me."

And yet every tooth in his head was false.



DENTAL PATENTS

Figure 3.

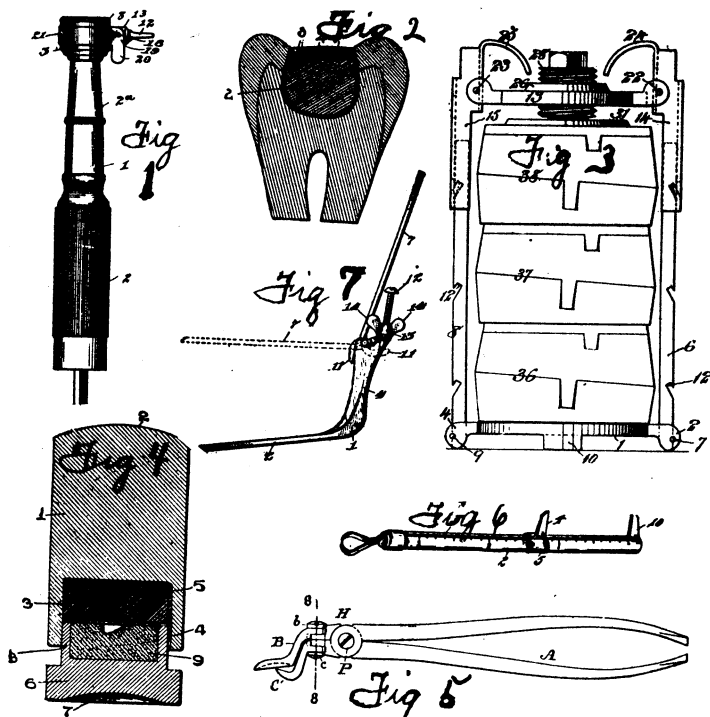
841,962. Dental Flask-Press.—James F. Hardy, New York, N. Y., assignor to Consolidated Dental Manufacturing Company, New York, N. Y., a Corporation of New York. Filed October 28, 1905. Serial No 284,799. Claim.—1. A dental flask-press comprising a base, uprights connected therewith, a cross-head carrying a screw and links adapted to form extensions of the uprights and serving to connect the cross-head with the uprights, the said uprights being provided with means for attaching the links thereto at different distances from the base.

Figure 4.

840,921. Dental Swage.—Joseph W. Dickey, St. Louis, Mo. Filed August 21, 1906. Serial No. 331,531. Claim.—The herein-described dental swage, comprising a base provided with a recess in its upper end, a filter of plastic material for said recess, the top surface of which filler lies flush with the upper edge of the base, an upper member provided with a recess in its lower end, and adapted to slide closely down over the upper end of the base; grooves formed in the inner face of the recess in the upper member, which grooves extend the entire length of said recess and a body of plastic material partially filling recess in the upper member; substantially as specified.

Figure 1.

842,113. Dental Plugger.—Safford G. Perry, New York, N. Y. Filed January 7, 1901. Serial No. 42,358. Claim.—1. In an angle dental plugger, the combination with a handpiece, of a spindle mounted to rotate therein, a dustproof chamber within which a portion of said spindle is exposed, a rotary hammer upon the spindle within said chamber, a laterally-extending socket leading out from said chamber, a plugging-



tool having cylindric portions seated to slide in said socket and an annular intervening portion of reduced diameter, and a spring-pressed controller co-operating with said plugging-tool to limit its extent of reciprocation under the action of the cam.

Figure 2.

842,357. Method of Filling Teeth.—Hamilton F. Strong, Cleveland, Ohio. Filed June 9, 1905. Serial No. 264,434. Claim.—1. The method herein described of filling teeth, consisting, first, in placing a lining of one or more layers of tin-foil about the wall of the cavity, then covering the tin-foil with a coating of non-conducting material in liquid form, and finally, filling the cavity with amalgam, gold, or other suitable filling material.

Figure 5.

833,375. Dental Instrument for Slitting and Removing Cap-Crowns.—Leo Dollar, Philadelphia, Pa., assignor of one-half to Edward H. Berry, Philadelphia, Pa. Filed August 3, 1906. Serial No. 329,040½. Claim.—1. A dental tool for splitting cap-crowns having the pivoted handles, a bearing-jaw adjustable in a plane parallel with the handle-pivot, a cutting-jaw, also adjustable in a plane parallel with the handle-pivot but independently of the bearing-jaw, substantially as shown and described.

Figure 6.

825,896. Dental Measuring-Tool.—Francis X. Dusseau and Bernard F. Kirk, Detroit, Mich. Filed December 7, 1905. Serial No. 290,694. Claim.—In combination with a grooved bar, a slide member engaging thereabout and with one end portion reaching thereinto and its other end portion projecting outwardly from said bar, said slide being adapted to frictionally resist its travel therealong, a flexible strap having one portion fixed to an end of said bar and the other portion fixed to said slide member, the intermediate portion of said strap extending beyond the end of said bar and being adapted to encircle an object, substantially as described.

Figure 7.

827,824. Dental Articulator.—Frederick W. Stephan, Chicago, Ill. Filed August 27, 1903. Serial No. 170,961. Claim.—1. In a dental articulator, the combination with a lower frame for supporting a cast of the lower jaw, of a frame for supporting a cast of the upper jaw.

WANTED.

To buy office in good Illinois town or would buy interest in one. Address, F. H. C., care AMERICAN DENTAL JOURNAL.

FOR SALE.

Office and practice in good Illinois town of 6,000; good reason for selling. Bargain. Address M. W. P., care AMERICAN DENTAL JOURNAL.

FOR SALE.

Practice in western town of 3,000; (or an associate); only resident dentist. Will sell cheap. Eyes failing. Address T. H. L., care of AMERICAN DENTAL JOURNAL.

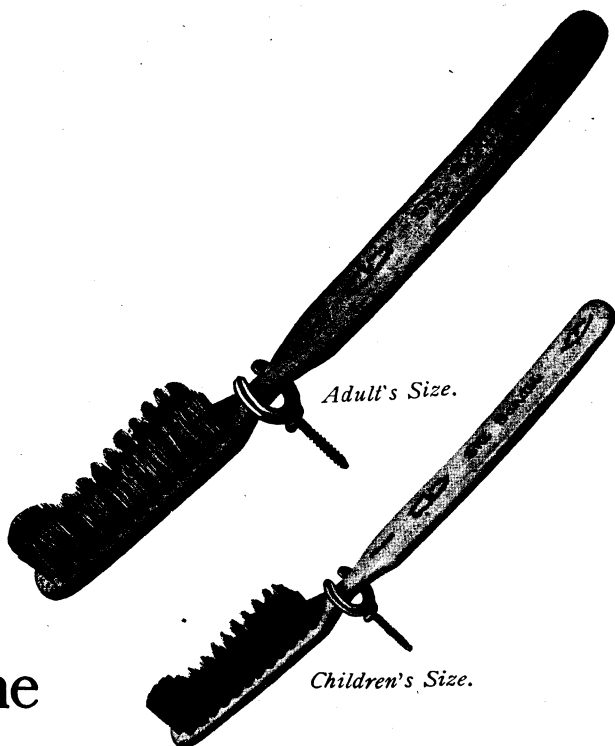
FOR SALE.

Dentist in S. C. town 2,000, growing, would sell practice and office building, 4 rooms and hall; built 1904 for dental office; fire-proof; good practice; no opposition; collected last year \$2,500. Prices and terms stated on application. Address F. A. D., care AMERICAN DENTAL JOURNAL.

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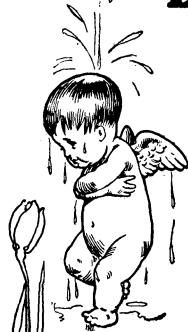
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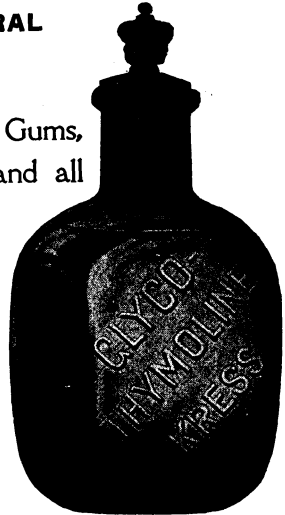
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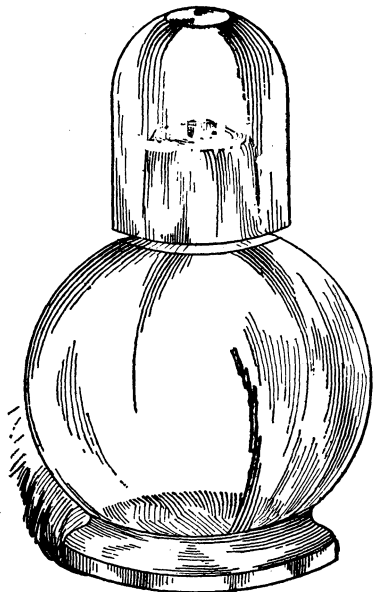
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